GENDER AND HEALTH IN ABUSIVE RELATIONSHIPS

by

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ABSTRACT

Researchers have long recognized intimate partner abuse as a social problem, but only recently has it been recognized as a public health problem. However, research to this point has failed to examine whether the health effects of intimate partner violence vary by gender. This dissertation uses data from the National Survey of Families and Households to examine the effects of intimate partner abuse on physical health, depression, fear, stress, social connectedness, and access to resources in intimate partner relationships. All models are stratified by gender in order to examine gender differences in health outcomes. Results indicate that there are gender differences, with a female disadvantage on many outcomes. Implications include inclusion of violence outcomes in future research of IPA, and recognition that "symmetry" definitions should include more than simple rates and ratios of violence reporting. Furthermore, this research indicates a need to expand the study of gender in low-level violence to assess other differences that were not addressed in this study.

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TABLE OF CONTENTS

ABSTRACT iii

LIST OF FIGURES vii

1 INTRODUCTION 1

Introduction: Intimate Partner Abuse and Health 1
Conceptualizing Intimate Partner Abuse as a Social and Legal Dilemma 3
The Great Debate on the Role of Gender in IPA 11
Bringing the Two Sides of the Debate Together: Typologies of Abuse 16
Theories of the Debate 37
Future Directions for Researching Situational Couple Violence 59

2 LITERATURE REVIEW OF HEALTH EFFECTS OF IPA 65

Introduction 65
Review of Literature of IPA and Health 67
Identifying Mechanisms Through Which IPA Leads to 80
Poor Health Outcomes 80
Social Mechanisms Through Which IPA Causes Poor Health 83
Health-Risk Behaviors of IPA Victims 91
Challenges of Research with Self-Reported Health Measures 92

3 RESEARCH METHODS 98

Data 98
Variables 104
Statistical Analysis 113
Strengths and Limitations to Study 119

4 RESULTS 124

Introduction 124
Sample Characteristics 125
Research Question One: Symmetry or Asymmetry in Violence 128
Victimization and Perpetration 128
Research Question Two: Symmetrical or Asymmetrical Injuries 139
Research Question Three: Symmetrical or Asymmetrical Health Outcomes 144
Research Question Four: Are Gender Symmetries or Asymmetries 179

in Social Factor Outcomes that Effect Health? 179

5 DISCUSSION AND CONCLUSIONS 218

Symmetry or Asymmetry in Violence Victimization and Perpetration 218
Inferential Findings of Gender Symmetry and Asymmetry in the Data 227
How Findings Further the Debate of Gender in IPA 243
Implications of Findings for Future Research 247
Theoretical Implications 253

APPENDIX 260

REFERENCES 318

LIST OF FIGURES

2. 1 Risk groups and health outcomes 84

4. 1 Income Wave 1 130

4. 2: Income Wave 2 131

4. 3: Income Wave 3 132

4. 4: Mean self–reported physical health by gender 145

4. 5: Distribution of social connectedness 188

4. 6 : Social connectedness stratified by gender 190

4. 7 : Box plots of annual income by gender 200

4. 8: Money spending fair by gender – Complete univariate report 209

CHAPTER 1

INTRODUCTION

Introduction: Intimate Partner Abuse and Health

On April 26, 2003 Tacoma's chief of police shot and killed his estranged wife, Crystal Brame, in a parking lot. This killing was not in the "line of duty;" rather, Police Chief David Brame used his service pistol to murder Crystal as his final act of intimate partner abuse before killing himself. Two young children, extended family, and friends mourned Crystal's death (Porterfield 2003). In July 2004, Mark Hacking was able to convince his family and thousands of volunteers to conduct a massive search for his wife, Lori Soares Hacking, whom he claimed had not returned from her morning jog. He later confessed to shooting her in the head, and throwing her body in a dumpster. Lori was 27 years old and pregnant with her first child when Mark Hacking violently took her life. His sentencing for this spousal homicide was a mere 6 years to life in prison (Thomson and Reavy 2005). In February 2004, Teri Jendusa-Nicolai's ex-husband beat her with a baseball bat, forced her into a trash bin, and abandoned her in a freezing cold storage unit. Teri survived, but was permanently injured by the frostbite, and suffered a miscarriage because of the incident (ABC 2004). Intimate partner abuse (IPA) in the United States is not limited to the stories of these three victims.

Crystal, Lori, Teri, and countless other victims were threatened, beat, raped, intimidated, or violently murdered by intimate partners. Although rates of intimate

partner homicide and reported IPA have been declining in recent years, Bureau of Justice Statistics (BJS) estimates that as many as 1/3 of female homicide victims and 3% of male homicide victims are killed by an intimate partner (BJS 1997). Additionally at least 22% of nonfatal violence against women, and 4% of nonfatal violence against men, is committed in the context of an intimate relationship (BJS 2007b) .

Although researchers agree that IPA claims countless victims, a major research debate centers on the role of gender as a risk factor for intimate partner violence victimization. Although researchers from both groups agree that women are primarily victims of severe violence, family violence researchers claim that both genders share equal risk of being victims or perpetrators of low level IPA (referred to as "gender symmetrical violence") (Dobash and Dobash 1979; Dutton 2006; Gelles, Flannery, Vazsonyi, and Waldman 2007; Johnson 2008). Feminist researchers claim that gender is the central risk factor for IPA victimization ("gender asymmetrical violence") (Dobash and Dobash 1979; Dutton 2006; Gelles, Flannery, Vazsonyi, and Waldman 2007; Johnson 2008). The two-fold purpose of this research is to determine if situational couple violence is gender symmetrical or asymmetrical, and to further the debate over the role of gender in IPA.

In this introductory chapter of this dissertation, I begin by describing a brief history of IPA policy and research. Then I present the key terms and theories used in the "gender symmetry" debate. Next, I explain how identifying health effects if IPA can further understanding of whether IPA is "symmetrical" or not. In subsequent chapters, I review existing literature of the health effects of IPA, and lay out a research plan for examining the effects of IPA on health outcomes.

Conceptualizing Intimate Partner Abuse as a Social and Legal Dilemma

Abuse of intimate partners has historical, social, and legal roots. Until recently, the legal system did not view men's violence against women as a violation of law. Traditionally, society viewed women as men's property; few laws existed to prevent violence against women. This hierarchy of men controlling women was considered to be "natural" (Dobash and Dobash 1979). In medieval times, husbands had the right to physically chastise or even kill their wives (Erez 2002). Although English Common law prohibited the murder of wives, the English law's "rule of thumb" gave a man the right to beat his wife with a stick that was smaller than the diameter of his own thumb (Erez 2002; Walker 1986). Even as late as 1962, the right of men to physically chastise women was upheld in United States Courts in the *Joyner v. Joyner* case where the court acknowledged that a husband has the right to use force to compel a wife to behave (Erez 2002).

Fortunately, in the United States and many other countries, legal and social sanctioning of the moral rightness of IPA has become less commonplace in modern times (Stark 2007; Straus, Kantor, and Moore 1994). In colonial Massachusetts, wife beating was illegal. In 1882, Maryland instituted a whipping post for abusive husbands. By the 1880s most American judges would agree that husbands did not have a right to physically administer "correction" to wives, but abuse was rarely prosecuted due to a common belief about the right to family privacy in domestic matters (Pleck 2004).

Although abuse within families was largely ignored in the early 1900s, the women's movement of the 1970s transformed the issue of violence in relationships from a private issue to a public problem, and led to the appearance of the first shelters for

battered women (Erez 2002). In the 1970s, researchers and legal entities first began to recognize IPA as a major social problem. In 1979 President Jimmy Carter established the Office of Domestic Violence in the United States (Pleck 2004). In the 1980s and later, there were efforts to reform the criminal justice system and a state-by-state movement towards prosecution of IPA and treatment programs for batterers (Erez 2002). In 1981 the Reagan administration closed the Office of Domestic violence because of budget cuts. However, in 1984 the same administration signed a bill appropriating $6 million to battered women's shelters. Congress first passed the Violence Against Women Act (VAWA) in 1994, granting protection, resources, and funding to programs for victims of IPA across the United States. VAWA legally provides women with greater protection from violent partners than was available prior to the legislation (Erwin, Gershon, Tiburzi, and Lin 2005).

The year 2009 marked the 15-year anniversary of the Violence Against Women Act (VAWA), yet IPA is still commonplace in many American households. It is estimated that one in four women will experience violence at the hands of an intimate partner in her lifetime (Tjaden and Thoennes 2000a). It is estimated that 1,200 deaths, two-million female injuries and 600,000 male injuries annually are attributed to IPA (CDC 2008). Researchers approximate excess health care costs due to IPA at $5.8 billion in a one year period (Max, Rice, Finkelstein, Bardwell, and Leadbetter 2004). Additionally, women exposed to IPA reported health care utilization 20% higher than did nonviolence exposed women. This was true even 5 years after abuse had ceased. Since Congress first passed the Violence Against Women Act, intimate partners have continued to use brutal force and violence. This violence shows no sign of ending soon.

IPA is particularly disturbing because loved ones, not strangers, inflict injuries and death on victims. IPA can happen to anyone, rich or poor, black or white. Social and financial boundaries do not exclude groups from IPA. The effects of IPA extend to children, extended family members, the workplace, and community.

Some researchers refer to IPA as “domestic violence,” “family violence,” “intimate partner abuse” or “wife beating.” Each term has a different connotation. “Domestic violence” and “family violence” definitions can include child abuse in addition to partner violence. “Wife beating” excludes anyone who is not a wife from being a victim. “Violence” indicates that all abuse is physically or sexually violent. The term “intimate partner abuse” refers to any type of physical, emotional, or sexual abuse that is inflicted by a current, or former, intimate partner, cohabiting partner, or spouse. This term is used because it eliminates child abuse from the definition, and includes forms of abuse that are not necessarily violent (including coercive or controlling behaviors, destruction of property and harm to others in an attempt to emotionally harm the primary victim (Stark 2007)). IPA does not limit the sample to only wives; instead, the term could refer to violence or abuse between cohabiting partners, dating partners, same-sex partners, or male victims. Additionally, IPA is not limited to abuse against current partners; it can refer to abuse against current or former intimate partners.

Although IPA can happen to anyone, some groups experience higher risk of IPA exposure than other groups. Women more often than men, poor more often than middle to upper-class, and minorities more often than whites, are disproportionately victims of IPA (BJS 2007a; Sokoloff 2005).

A vast body of research indicates that women are more often victims of IPA and intimate partner homicide than are men (BJS 2007a; Dobash and Dobash 1979; Stark 2007; Tjaden and Thoennes 1998; Tjaden and Thoennes 2000a; Tjaden and Thoennes 2000b). Research indicates that 76% of female rape or physically assault victims were assaulted by a current or former intimate partner. Conversely, intimate partner assaults only composed 18% of the corresponding male victims. Additionally, women are significantly more likely than men to be injured during an assault; 39% of women and 25% of men were injured during their most recent assault (Tjaden and Thoennes 1998).

Some researchers dispute the role of class and race in intimate partner abuse. Nonetheless, a substantial body of research indicates that rates and outcomes of IPA vary depending on these social characteristics. Researchers find that lower social classes are more likely to report IPA (Dekerseredy, Saunders, Schwartz, and Alvi 1997; Evans 2005; Pavao, Alvarez, Baumrind, Induni, and Kimerling 2007; Sokoloff 2005; Staggs and Riger 2005). Women with household incomes under $7,500 per year are most likely to report being victims of IPA, while women in households with incomes over $50,000 are least likely to report experiencing IPA (BJS 2007a; BJS 2007b). While the poor are more likely to experience IPA, IPA also contributes to the perpetuation of poverty. Recent IPA is associated with chronic unemployment, thus further contributing to higher rates of IPA among the poor, and higher rates of poverty among victims of IPA (Staggs and Riger 2005). Additionally, IPA can be a *causal* factor leading to poverty. At least for some women, social service benefits may be a means of support in the process of leaving an abusive partner (Sokoloff 2005). For women already in poverty, IPA creates an additional barrier to escaping poverty safely (Scott, London, and Myers 2002; Sokoloff 2005).

Evidence suggests poverty as a risk factor for violent relationships. However, researchers do not claim that IPA is *only* a problem of the poor. Victims from middle and upper classes may be excluded from or under-reported in shelter-based research because they may have resources that allow them to escape violent relationships without using shelter services. In other words, the poor are more likely to be present in research because they use more social services to aid in escape from violent relationships (Sokoloff 2005). Although IPA is *more frequently* reported among lower SES groups, those from affluent households are not immune to violent relationships (BJS 2007a; BJS 2007b).

Race, ethnicity, and age are associated with different rates of IPA experience. A concentration of poverty and lack of resources among some minority groups puts them at higher risk of IPA, and may create a barrier to accessing services. Research indicates that 55% of black women and 65% of American Indian or Alaskan Native women will be raped or physically assaulted in their lifetimes (Tjaden and Thoennes 1998). For immigrants, language barriers and legal status may further prevent victims from escaping violent relationships. Moreover, police may resist arrests of immigrant perpetrators if they feel that violence is a "way of life" or a "cultural norm " for the family (Menjivar and Salcido 2002). Women of color who are victims of IPA are more likely to have their children taken away from them or to be arrested for "fighting back" or protecting themselves; this can prevent the victims from seeking help or protection from future violence (Sokoloff 2005). Age can also be a risk factor for IPA. Although younger women are more likely to be victims of IPA (Romans, Forte, Cohen, Du Mont, and Hyman 2007; Stueve and O'Donnell 2008), it is a significant problem for elderly women as well (Leisey, Kupstas, and Cooper 2009; Phillips 2000).

Understanding IPA is essential to prevent further victimization and to understand overall gender status and patriarchy in our society. In the modern era, traditional patriarchy lost ground as women gained access to many legal rights that society previously granted only to men. Both sexes are now legally able to able to initiate divorce, work for pay, own property, and vote. Nonetheless, there is still an unequal balance of power: media, socialization, law enforcement, wage differentials and other societal organizations successfully keep women in subordination to men. By examining the continued prevalence of violence by men against women, it is evident that the ideal of gender equality is far from a reality. Patriarchy is still thriving within the intimate lives of millions of Americans today. While laws allege to give equal rights, gendered social expectations, lack of equal resources, and lack of adequate enforcement of laws leave women subjugated to men.

Through the study of violence and abuse in intimate relationships, we can better understand how the current social system allocates power and resources by gender, which tells us something of gendered power and social status differentials that remain amidst gained legal equalities. Although legal and social interventions since the 1970s have attempted to eliminate IPA, it is still with us. By studying violence in intimate relationships, we can better understand how socialized gender roles and structural gender inequalities lead to perpetuation of violence and abuse against women. Intimate partner relationships may be the best environment to study a socially supported patriarchal system because it is within intimate partner relationships that individuals enact their gendered socialization, and "do gender" (Anderson 2005).

Within sociological theories, there are a variety of perspectives and explanations of IPA. Some sociological researchers follow a frustration-aggression perspective; they theorize that frustration or stressful life events lead to use of violence in relationships (Felson 1992). Others examine IPA through a criminologist perspective (Melton 1999; Melton and Belknap 2003). Still others use cultural theories to explain IPA (Levinson 1989). In general, sociological theories address a larger picture of abuse in the context of a social system. Sociologists attempt to explain what about *society* perpetuates violence, or what about *society* makes men's and women's experiences with violence different. Although there is a plethora of explanations of IPA in many research fields, this research will focus on a debate that has emerged between two sociological research camps.

Researchers from two camps disagree on the role of gender in IPA victimization and perpetration, theoretical conceptions of IPA, methods of measuring IPA, and results of IPA research. Family violence researchers claim that men and women are violent at about equal rates ("gender symmetrical violence") (Gelles 1972; Straus, Gelles, and Steinmetz 1986; Straus and Hotaling 1980).Although family violence researchers acknowledge that women are more often injured or harmed in severe violence, they stand by the idea that "In the home, women are frequently as, or even more, violent than men" (Gelles Flannery, Vazsonyi, and Waldman 2007: p. 408). Feminist researchers claim that women are disproportionately the victims of IPA, while men are disproportionately the perpetrators of IPA ("gender asymmetrical violence") (Dobash and Dobash 1979; Melton and Belknap 2003; Stark 2007; Tjaden and Thoennes 2000a; Yllo and Bograd 1988). This continued debate is problematic to policy makers and researchers who would like to help the "real" victims of IPA. On one hand, if policy makers believe that family violence

theorists are correct, the policy implications could be allocating of less funding to programs that help women, or supporting increases of dual-arrest policies. On the other hand, if policy makers believe that feminist theorists are correct, policy changes could lead to an increase in perpetrator accountability, and reexamination of dual-arrest policies could reduce arrests of victims who fight back.

A large body of literature has emerged addressing the two sides of the debate. Methodological advancements have led to conceptualization of IPA not simply as a "domestic problem," but as a public health concern. Framing IPA as a health concern exposes previously unacknowledged gender differences in costs and consequences of violent intimate relationships. By framing IPA as a public health concern, researchers can gain new understanding of the injury effects, emotional health effects, and physical health effects. However, existing research examining the health effects of IPA is limited and leaves many questions unanswered. Previous research failed to examine whether there is "gender symmetry" in injury and health outcomes, or to theorize on the mechanisms through which IPA produces poor health outcomes. Furthermore, current research has focused on severely violent couples and neglected to research the effects of IPA on health of couples with low-level violence or in couples where both individuals report using violence.

Studying health outcomes and gender together can address these research gaps simultaneously. It can reveal if health outcomes and consequences of IPA are "gender symmetrical," and it can reveal answers to looming questions about the mechanisms through which IPA influences health outcomes for differing levels of relationship violence. Existing research by social epidemiologists indicates that social factors

influence health outcomes. For example, stress, lack of social support, and lack of resources can lead to poor health outcomes (Berkman and Syme 1979; Marmot and Wilkinson 1999; Marmot and Wilkinson 2003). IPA is more common among those with fewer resources. Furthermore, stress, and lack of social support characteristically accompany IPA. An understanding that social factors influence health outcomes allows for better understanding the mechanisms through which IPA may lead to poor health outcomes, and may lead to a furthering of the debate over gender symmetry or asymmetry in IPA.

The Great Debate on the Role of Gender in IPA

As was previously noted, there are two distinct ways of researching IPA. The classifications of these research groups include family violence and feminist researchers.[1] At first glance, the two groups appear to agree on many aspects of IPA. Family violence theorists believe that to end IPA, it will take, "changing the existing character of society and the family (Straus, Gelles, and Steinmetz 2006: p. xxii)." Gelles writes that although data indicate that men and women have similar rates of hitting, "marital violence is primarily a problem of victimized women (Gelles 1997: p. 93)." Furthermore, Gelles reports that injuries are 10 times more likely among women than among men. Family violence researchers mention economic inequalities, sexual violence, and male advantage in size (Gelles 1997). Feminist researchers agree with each of these statements, so some may wonder why there is a debate when both sides appear to be examining the same issues.

[1] In this dissertation, family violence and feminist researchers are classified according to their view of the role of gender in IPA. It must be noted that there is a gray area, and not all researchers fit nicely into one category or the other. Additionally, not all researchers would classify themselves as one or the other.

Upon further examination, it is clear that the debate centers on definitions, theories, and methods of each camp. Family violence and feminist theories and methods draw two completely different pictures of IPA. Family violence researchers (including Gelles, Strauss, Dutton, and others), perceive gender as only one small piece in matrix explaining IPA, and they often find that men and women report the use of violence at about equal rates. They see *violence, not gender,* as the primary factor in IPA. Feminist researchers (including Dobash, Johnson, Anderson, Tjaden, Thoennes, and others) generally perceive IPA as an outcome of a patriarchal social system. They find that men use violence at higher rates than women do, and that women suffer more severe consequences because of violence. In this section, I will details the differences between the findings of family violence and feminist researchers.

Family Violence Research Findings

The current divide between family violence and feminist researchers was not characteristic of early research. Studies of IPA were quite rare until the early 1970s when researchers began to examine violence in families, often grouping violence against wives with child abuse or other forms of family violence (Gelles 1972; Goode 1971). Early work by Gelles and his colleagues indicated that some forms of violence in the family were "legitimate" and even "accepted" in the family (Gelles 1972). In 1977-1978 a controversy was sparked among researchers over Steinmetz's study of 57 couples titled, "The Battered Husband Syndrome" (Steinmetz 1977), which claimed sex symmetry in the reporting of partner assaults by husbands and wives. Although the methods of this report were questioned and refuted by feminist researchers (Anderson 2005), research by

family violence theorists using similar methods have supported these findings (Fiebert 1997; Straus, Kurz, and Walsh 1997).

Gender symmetry findings by family violence researchers indicate that *an approximately equal number* of men and women use violence in intimate relationships. Family violence researchers found that 3.8% of men have used physical violence against their current wife, and 4.6% of wives have used physical violence against current husbands (Straus and Hotaling 1980). Additional research indicates that about 1/8 of husbands (and approximately the same number of wives) carried out at least one act of violence over the course of the survey year (12.1% husbands, 11.6% wives) (Straus et al. 1986). Even in cases where family violence researchers concede that females are primary victims, there is still an underlying assumption that the victim shares blame for the abuse. For example, Gelles wrote that,

> Wives often accept being struck. They feel they deserve to be hit because they precipitated the act by badgering or nagging their husbands. Victim-precipitated violence often is normalized by the wife, who states that because she caused it, she deserved to be hit (Gelles 1972: p. 59).

This statement makes it appear as if the victim "caused" the violence, or in some way provoke or nag husbands to use abuse. Family violence researchers often see the victim as an active participant in the violence, as Gelles exemplified in the following quote,

> The role of victim is an important and active one. The actions of the victim are vital intervening events between the structural stresses that lead to violence and the violent acts themselves (Gelles 1972: p. 155).

Some family violence researchers believe that patriarchy is no longer a major factor influencing IPA in Western societies. Dutton argues that women use violence to the same extent as men, for the same reasons, and with the same results (Dutton 2006). In many cases of family violence, researcher could perceive *both* members of the couple can

as a “victim” *and* as a “perpetrator.” After all, in many cases, both the man and the woman report using violence.

Although family violence theorists who examine gender primarily focus on gender similarities in violence, they have found some gendered differences in types of violence used. For example, family violence researchers found that male perpetrators are more likely to report sexual perpetration of violence, but female perpetrators are more likely to report psychological IPA (Prospero 2008). Additionally, family violence researchers have found that husbands report pushing, grabbing, shoving, slapping, beating up, or using a gun or knife at higher rates (Straus et al. 2006). Husbands inflict the highest rates of the most dangerous and injurious forms of violence - including beating up wives, and using knife or gun (Straus et al. 1986). Finally, when husbands commit violent acts, they repeat the violence more often than is the case for wives (Straus et al. 1986; Straus and Hotaling 1980).

Feminist Research Findings

Feminist researchers look at IPA from another angle; they focuses on gender differences in IPA. Their research often demonstrates that IPA is centered on cultural meanings attached to gender in a sexist and patriarchal society (Kilmartin and Allison 2007) , and is “gender asymmetrical.” Feminist research has found that IPA is disproportionately a problem of males assaulting female partners; this violence is primarily an attack directed toward a female that is possible because of her disadvantageous position within a patriarchal social system (Kilmartin and Allison 2007). Gender, to a much greater extent than other contributing factors, make women more susceptible to severe forms of violence (Johnson 2008). While it is undisputed that

females may use violence, they are not likely to use other abusive methods of power, control, or coercion to attempt to dominate partner (Johnson 2008; Stark 2007; Yllo and Bograd 1988). Conversely, feminist researchers have found that male violence is as much about controlling the victim as it is about using violence.

Feminist research has revealed that women are disproportionately controlled, beaten, raped, stalked, and killed by men (Atkinson, Greastein, and Lang 2005; Belknap and Melton 2005; Dobash and Dobash 1979; Johnson 2008; Tjaden and Thoennes 2000a; Yllo and Bograd 1988). From 1950-1960 30% of all violent assaults occurred in the home, and 90% were males against females (Dobash and Dobash 1979). From 1976 to 1995, 30% of female murder victims were killed by an intimate partner compared to only 5% of male murder victims (BJS 2007b). Regardless of marital status, women are more likely to be nonfatally abused by an intimate partner than were men (BJS 2007b); Approximately 1.5 million women and 834,700 men are physically or sexually assaulted by an intimate partner annually in the United States. Within these numbers, women average more than twice as many victimizations per victim as men (Tjaden and Thoennes 1998).

Additional research of criminal justice resources indicates that men perpetrate violence in at least 90% of intimate partner assault cases (Bachman and Saltzman 1995). Furthermore, police data research demonstrates that men identified as “victims” were more likely than women to also be classified as “perpetrators”; this is an indication that when women are violent, it is likely to be in self defense or fighting back (Melton and Belknap 2003). Even among couples experiencing dual arrests, few women could be seen

as the primary aggressor (Henning, Renauer, and Holdford 2006). These findings demonstrate unmistakable gender differences in violence victimization and perpetration.

Bringing the Two Sides of the Debate Together: Typologies of Abuse

Researcher Michael Johnson was instrumental in distinguishing between types of violence in intimate relationships, and in identifying a typology of intimate partner abuse (Johnson 1995; Johnson 2001). His more recent work has attempted to rectify the opposing finding of family violence and feminist researchers by explaining that family violence and feminist researchers study different types of violence. While several other researchers have created their own typologies of violence or perpetrators(Jacobson and Gottman 1998; Stark 2007), I primarily use the titles provided by Johnson for the duration of this dissertation because they are widely known and studied in IPA literature. According to Johnson, there are four basic types of IPA. These include intimate terrorists, violent resistant, mutually violent control and situational couple violence. Johnson claims that feminist researchers primarily study "intimate terrorists," while family violence researchers primarily study "common couple violence."

Johnson classifies perpetrators as "intimate terrorist" ("IT") if the primary perpetrator is violent *and* controlling. The partner may use violence, but is not controlling (if this is the case, the partner is classified "violent resistant," which will be addressed later in this section). The element of control distinguishes this type of violence from several of the other types. The perpetrator's desire to control his partner may lead to a willingness to do anything to maintain control, and may even lead to homicide or suicide (Sillito and Salari 2006; Stark 2007). Males are the primary perpetrators of intimate

terrorism, while females are primarily victims. This type of violence is likely to be severe and escalate over time.

Johnson claims that samples used in feminist research often focuses on intimate terrorist relationships; feminist research sampling of data from agencies that serve victims of severe IPA (clinical samples, shelter populations, or police data), leads to an overrepresentation of IT in feminist research samples than is present in the general population. Because of this over-sampling of intimate terrorists, Johnson believes that feminist researchers will see higher rates of male perpetrated violence, and higher rates of severe violence(Johnson 2008; Johnson and Ferraro 2000; Johnson and Leone 2005) than is seen in nationally representative samples.

The second type of violence in Johnson's typology is "violent resistant" ("VR"). In VR couples, an individual (usually a woman) uses violence to fight back or resist violent attempts by her partner (usually male). The female uses violence, but she does not attempt to control her partner. VR is most often perpetrated by women who are partnered with an intimate terrorist (Johnson 2008; Johnson and Ferraro 2000). In violent resistant relationships, violence is not always used in "self-defense" per say, but it is used by someone who is primarily the victim of a campaign of violence to attempt to escape a long-term violent relationship.

The third type of violence is "mutually violent control" ("MVC"). In these couples, both partners use violence and attempt to control their partners. According to Johnson, this type of violence is extremely rare (Johnson 2005; Johnson 2008; Johnson and Ferraro 2000). Researchers must take care not to classify an IT &VR relationship as a MVC relationship.

The last type of violence, “situational couple violence” (“SCV”), is theorized to be the most common type of IPA. This is normally low-level violence, which does not escalate over time, where one or both individuals use violence to resolve disputes, but neither is controlling. Rather than an effort at control, couples experiencing situational couple violence may perceive violence as a legitimate way to address marital problems. Within SCV relationships, as many women report using violence in a one year period as men do, and the violence is not likely to escalate over time. Family violence research samples are often taken from large, nationally representative samples primarily composed of couples experiencing situational couple violence (Johnson 2008). This has led family violence researchers to believe that women are just as violent as men, and thus the idea of “gender symmetry” stems from this finding. The nature of large, nationally representative data sets is to omit relationships experiencing severe violence over time. Severely violent couples may refuse initial participation. Furthermore, although the first wave may include severe violence, more severely violent couples may be left out of the sample in later waves because of refusal to continue participation, disintegration of the relationship, or the rare circumstance when violence may have lead to death of one or both members of the couple. (Brush 1990; Salari and Baldwin 2002). This leads to an under sampling of intimate terrorism in samples typically studied by family violence researchers.

The difference in data and sample type studied by feminist and family violence researchers lead feminist researchers to research couples with high levels of male-perpetrated violence, and lead family violence researchers to study couples wherein both men and women use low levels of violence. According to Johnson, these differences in

types of violence and in data selection are the source of the debate over gender symmetry or gender asymmetry in IPA.

An alternative explanation for difference in findings is that feminist researchers tend to study only victims or perpetrators separately, rather than both together. Research by family violence theorists suggests that it is necessary to examine data from victims and perpetrators together to get a clear picture of intimate partner abuse (Straus et al. 2006).

Although data and sample differences explain a portion of the conflicting findings, the differences are more complex. Research results are not only a function of data or sample selection, but of overall IPA conceptualization and of the data instruments used to identify abuse. Research suggests that some national samples still exhibit high levels of primarily male-perpetrated violence; it is not a national sample, but the types of questions and methodologies of many national samples, that makes the difference (Melton and Belknap 2003). For example, feminist researchers using the National Violence against Women survey (NVAWS), found asymmetrical gendered violence even though they were using a large national sample (Tjaden and Thoennes 1998; Tjaden and Thoennes 2000b). The difference between the NVAWS and national surveys typically used by family violence researchers is that the NVAWS included measures of sexual violence, violence from previous partners, violence frequency, violence severity, and injury.

Underlying research assumptions classify SCV as less gendered than intimate terrorism or violent resistance. Because both men and women use violence, SCV researchers often assume that this violence means the same thing, and leads to the same

outcomes, for men and women. Low rates of injuries in SCV, coupled with high rates of "mutual violence" have been the focus of assumptions that some men and women see SCV as a "legitimate(Stark 2007: 234)" or "normal" part of family life (Johnson 2008: 60) .

When taken out of the context of gendered family life, and the gendered social hierarchy, it is easy to see why this type of violence would look gender symmetrical. For decades, family violence researchers have shown that when using measurements of reported violence over a one-year period, men and women use SCV at similar rates. Both men and women have reported using violence against a partner, and the questions focus on violence within an argument. However, researchers have not adequately studied SCV within the context of the gendered social system. Whenever possible, this research will address SCV in the context of a gendered social system.

The next section will address how family violence and feminist conceptualizations and definitions, in addition to instrumental differences in measuring violence, lead to opposing viewpoints in the gender symmetry debate.

Conceptual Differences Within the Debate

Differences between family violence and feminist research of IPA result from dissimilarities in definitions and conceptualizations of "gender symmetry," "gender," "battering," and "victimization" between the two groups. In this section, I will explain the differences in these definitions and conceptualizations. Finally, I will explain how combining feminist conceptualizations with typically family violence data may help lead to a resolution of the debate

To understand the "gender symmetry" debate, it is imperative to know the difference between family violence and feminist definitions of "gender symmetry." Does "gender symmetry" mean that women use violence towards men *as often* as men use violence toward women? Is it that an *equal number* of men and women use violence in relationships? Or, are the *motivations* for violence the same? Does violence *mean* the same thing for both genders? Do *outcomes* of violence vary by gender? Without understanding which of these definitions researchers use to define "gender symmetry," it is impossible to analyze the two sides.

Family violence methodologies define "gender symmetry" as an equal number of men and women that use violence in current relationships over a one-year period. Family violence researchers determine that violence is "symmetrical" by examine how many couples only report male violence, only report female violence, or report that both individuals used violence. Research indicates that in 49% of violence couples, both partners who use violence, while 27% of violent couples contain only a violent male and 24% contain only a violent female (Straus et al. 2006). One limitation to this method is that it does not account for frequency or severity of violent acts. If a man, or a woman, uses violence 1000 times or 1 time, the CTS does not differentiate between the violence rates in identifying perpetrators.

One family violence study of a US army personnel survey indicates male soldiers report a rate of minor to severe violence of 29-34%, while female soldiers reported a rate of 39-40%. Within the survey, the most common pattern was for violence to be reported by both partners (Cook 1997). While there is no reporting of the frequency of acts, or motives behind the acts, this does tell readers that more women had *reported* violence

than had men. Within the study sample, 77% of women report having used violence against a partner within 6 months prior to seeking services of a domestic violence shelter. Although the author used this as an example of how both men and women use violence in relationships(Cook 1997), a primary oversight in the data was the contextualizing of the violence in terms of self defense motives, or violence initiation.

Researchers who measure violence as the number of men or women who have used violence often neglect to examine *context* of the violent act; family violence research often considers couples to be "mutually violent" even if the woman was using violence in self defense or in trying to escape an attack. Although family violence definitions and measurements of "gender symmetry" cannot indicate that men and women are equally violent, or even that they use violence at equal rates, it can indicate the portions of the population that have used violence against a partner. Even though these measurements only account for a narrow portion of the acts, motivations, and meanings that comprise IPA, they can be useful in identifying rates of situational couple violence experienced in samples.

Some family violence researchers recognize the weakness in these measurements, and indicate that even if both men and women use violence in relationships, it does not mean that the violence is "symmetrical." Gelles cautioned against interpreting his findings to mean that violence was nongendered because it did not account for injuries, self-defense, or other gender differences within violent and nonviolent couples (Gelles 1997). He stated that,

> If one goes by how much harm is done, who initiates the violence, and how easy it is for a victim to escape the violence, women are clearly the disproportionate victims of domestic violence (Gelles et al. 2007: p. 408).

Straus and Gelles write, "Even though wives are also violent, they are in a weaker, more vulnerable position in respect to violence in the family (Straus et al. 1986: p. 299)." This is a good example of family violence researchers keeping the violence in the context of the family settings in which it takes place. Gelles, Straus, and other early researchers report that men inflict the highest rates of the most dangerous and injurious forms of violence - including beating up wives, and using knife or gun (Straus et al. 1986). Additionally, when husbands commit violent acts, they repeat the violence more often than is the case for wives (Straus et al. 1986; Straus and Hotaling 1980).

Although it was not the intention of all family violence researchers to create a "gender symmetry" argument, modern family violence researchers often neglected to contextualize violence, and claimed that men and women are equally violent (Dutton 2006; Graham-Kevan and Archer 2008; Prospero 2008) by limiting the way "gender symmetry" is defined and measured . For example, to keep results appearing "gender symmetric," family violence researchers often neglect to measure sexual violence (which males more often perpetrate) in their assessment of "symmetry." When family violence theorists include sexual violence in assessments of "symmetry," the results no longer appear purely symmetrical.

For example, Prospero's report of gender symmetry in a sample that only included couples where *both* had used violence. Although he excluded any couples with only one violent member (thereby skewing the results toward "symmetry"), his data still showed that males were more likely to perpetrate sexual IPA ($t=4.055$; $p<.001$) (Prospero 2008), and that women were more likely to report somatic complaints (physical responses

to violence) than men. Although Prospero was trying to make a case for sex symmetry, results indicated that the data showed evidence of asymmetries in IPA.

Feminist researchers look at gender symmetry in IPA differently than family violence researchers. Feminist researchers use a broad conceptualization of symmetry, and attempt to contextualize violence when possible. Feminist methods find that men use violence *more often* than women, *more* men use violence than women, *motivations* for violence differ for men and women, violence *means* different things for men than for women, and *outcomes* of violence are unequal for men and women (Kimmel 2002). The broad conceptualization of *symmetry* used by feminist researchers produces gender *asymmetrical* results. Melton and Belknap's analysis of police forms and pretrial forms in a Midwestern urban area is a great example of this. If one examines only cases where there is a cross-complaint, it appears almost symmetrical: 108 male defendants and 109 female defendants have a partner who also used violence. However, in addition to cases where both genders use violence, 1832 men and 223 women used violence with a nonviolent partner. If only those with cross-complaint are examined, there would be an image of gender symmetry, but Melton and Belknap's complete analysis showed that 1,940 males used violence (94.4% of whom did not have a violent partner), while only 332 women used violence (with over 32% of these having a violent partner as well). Additionally, males made more threats and inflicted more physical harm than females (Melton and Belknap 2003). While there is no question that these data show gender asymmetrical violence, if Melton and Belknap had used a family violence method of eliminating any nonmutually violent couples (Prospero 2008), the results could have appeared gender symmetrical.

Jacobson and Gottman's study of 201 battering couples provides additional support for the feminist framework of gender asymmetrical violence. They examined couples experiencing high level, and low-level violence in their relationship. Their results indicated that the *impact* and *function* of violence was very different even in relationships where both men and women reported using violence. Male violence does much more damage, and is more likely to lead to injury and death of female partners. Men are more likely to use control tactics, isolation, and intimidation in addition to physical violence as a means of subjugating a partner. Furthermore, Jacobson and Gottman found that female violence was most often in self-defense. Their research indicated that women do use violence to defend themselves; they may even push or hit as often as their husbands, but *it is the women who is beaten up* (Jacobson and Gottman 1998). This finding is also supported by Bureau of Justice Statistics analysis of criminal IPA and homicide from 1976 to 2005 indicating that for every racial, ethnic, age, and marital status group, women were significantly more likely to be violently victimized or murdered by intimate partners than were men (BJS 2007b). These research results indicate that violence in intimate partnerships is asymmetrical when examined within a broader definition of gender symmetry.

Conceptualizing Gender

Family violence research often conceptualizes "gender" as an individual characteristic, which is measured by sex-frequency variables. Family violence theorists count frequencies of "males" and "females," that use violence. This measurement of gender neglects to identifying how violence may vary in the context of a gendered environment, or to account for the ways gender interacts with the social system

(Anderson 2005). The approach of using gender as an independent sex-ratio variable carries with it the assumption that if both men and women use IPA, IPA is not "gendered." Feminist researchers argue that this approach equates "sex" with "gender" and is too simplistic of an approach to gender measurement(Anderson 2005).

Feminists have shifted IPA research from individualist approaches to approaches that conceptualize abuse within the patriarchal social system (Anderson 2005; Atkinson et al. 2005; Scott et al. 2002; Stark 2007). Feminist conceptualization of gender includes analysis of gender role socialization and structural gender inequalities of a patriarchal system (Anderson 1997; Anderson 2005).

For example, feminists show there cannot be "gender symmetry" in IPA because of gender asymmetries in social roles that teach men violence (Kimmel 2002; Osthoff 2002), socialized pairings that give men strength and resource advantages, and gender roles that give men resource advantages (Anderson 2005; Atkinson et al. 2005; Scott et al. 2002).

Feminists often argue that gendered social pairings create an asymmetrical relationship that cannot allow symmetrical violence. In our culture, men often marry women who are younger, smaller, less educated, and have a lower status than themselves (O'Brien 1971). This "marriage gradient" creates an advantage for men in violent relationships. The socialized pairings of larger, more-powerful men with smaller, less-powerful women gives men size and strength advantages that translate into men's ability to use violence to enforce subordination of women in relationships.

Furthermore, men and women do not have equal access to learning violence. Society teaches men to use violence. Society rewards men for their use of violence, and

use violence to show their masculinity. For example, men are more likely to be encouraged to play sports or to apply for jobs that require the use of violence (Anderson 2005). Not only do men have greater training in violence, but they also have more malevolent motives for using violence; male motives to use violence often include controlling partners or gaining power (Stark 2007). Conversely, social roles teach women to be submissive, and to rely on men for care. Women are not taught to use violence, and are more often punished for use of violence (Anderson 2005). By observation of these different gender roles and socialization patterns, it is clear that men and women do not experience, or participate in, violence equally or symmetrically.

Additionally, within the social system, men have resource advantage. As traditional "breadwinners," men often work for pay. This creates a male advantage in accessing financial resources and career experience. As traditional "homemakers," women's carework goes unpaid. This creates a female disadvantage; females who assume caretaking roles forgo career investments, experience in the job market, and access to independent financial stability. These socialized gender roles of breadwinning and homemaking create a power and resource differential where women are reliant on the mercy or kindness of men to share resources. This can create "dangerous dependencies" for poor women whose only access to resources may be in remaining in an abusive relationship or in turning to prostitution or drugs for resources (Scott et al. 2002).

Even in relationships where both men and women have careers, females are at a resource disadvantage. Care work is still primarily performed by women, and women more often leave careers to care for young children (Hochschild 1989). Women's time

away from unpaid care work translates into fewer years of work experience, and lower wages when women reenter the workforce (Smock, Manning, and Gupta 1999).

Furthermore, when females earn more than men do, female resources do not necessarily translate to an advantage for women. Some research suggests that women who are economically more advantaged than their husbands may be at risk of abuse *because* they have more resources (Atkinson et al. 2005). Traditional men may use violence as an "ultimate resource" against women with financial resource advantages. In other words, it does not matter if a woman has many resources or few resources; of the man wants the power inherent in the traditional breadwinner and homemaker roles, he uses violence to secure power and control in intimate relationships (Allen and Straus 1980; Yllo 1984). This supports the idea that it is not simply resources, but socially prescribed allocation of resources by gender, that leads to violence (Salari and Baldwin 2002).

These gendered male advantage in training in violence, socialized pairings, and resources mean that intimate partner relationships, violent or not, cannot be "gender symmetric" because women are at a great disadvantage compared to men. "Gender symmetry" assumes that male and female violence rates could be the same, *all other things equal*. Not all things are equal. Gender disadvantages for females create an uneven playing field wherein women have a decided disadvantage.

Gender differences in pairings, resources, and gender roles are often socially allocated by sex, but traditionally measurements of "male" or "female" as independent variables fail to capture the complexity of what it really means to be a "man" or a "woman" in a gendered society. Because of this, feminist researchers who wish to

capture “gender” rather than only “sex frequencies” may choose to stratify samples by gender, or to use a measure of gender ideology in their research. I will discuss the advantages of sample sex stratification later in this dissertation.

Conceptualizing Battering

Family Violence Conceptions of Battering

In addition to differing perceptions of the role of gender in violent relationships, family violence and feminist researchers conceptualize and measure “battering” differently. According to family violence methods of defining “battering,” “Any couple where either the husband hit the wife, or the wife hit the husband - even if it was ‘just’ a slap or push - was counted as having been violent that year” (Straus et al. 2006: p. 205). This means that if someone uses violence in self-defense researchers identify this as equally violent to someone who uses a planned campaign of terror to control a partner. To further iterate, *any* time a respondent reports that he or she has *ever* hit, pushed, grabbed, shoved, slapped, or tried to hit another person, he or she is regarded as a violent aggressor or perpetrator (Dowd 2001; Dutton 2006; Straus et al. 1986).

Family violence definitions of battering that identify any violence as “abusive” cannot account for the context within which the violence takes place. Without context, it is easy to misinterpret findings or to assume that two very different items are similar. Because family violence researchers often classify *any violence* as “abusive” (Straus and Hotaling 1980), all violence appears equal. There can be no differentiation between violence used in self-protection and violence used in aggression.

I use a metaphor of athleticism to explain the importance of context, and to describe why it is important to include contextual factors in analyses. If you have one

person who only runs to escape danger, society would not think of her as an "athlete" simply because she runs when she is in danger. Someone who runs to escape danger is qualitatively different in their running skills, strength, and speed from another individual who may run marathons regularly. Running frequently, conditions the marathon runner's body and mind to be better prepared for running long distances. Society would never look at these two individual runners and assume they were both equally "athletic." Nevertheless, without accounting for the context of self-defense, labeling all violence as "abusive" is similar to labeling all running as "athletic." Without context, it is impossible to know who is "abusive" or who is using violent tactics in self-defense or as a way of fighting back.

By only counting frequencies of violent acts over the period of a year, and using this to label an "abuser" or a "batterer," family violence methods fail to differentiate between self-defense motives and motives to gain power and control, and they shift blame for violence from perpetrators to victims. Furthermore, this definition of "battering" fails to consider the extent to which *nonviolent* techniques are used to intimidate and dominate in abusive relationships (Brush 1990). If a man hangs his wife's dog (Stark 2007), or threatens her family members, it would not be considered "abusive" under this definition.

It appears that family violence theorists see women as rational actors who "choose" to live with violence rather than "choosing" poverty. Family violence researchers write, "Many women continue to endure physical attacks from their husbands because a divorce means living in poverty" (Straus et al. 2006: p. 207). This viewpoint

lacks contextualization of violence or victimization within a system of structural gender inequalities (or socialized gender roles) that make escaping impossible for many victims.

Family violence researchers often identify individual characteristics of batterers to explain perpetrator violence. They theorize that batterers have low self-esteem or personality disorders that lead them to use violence (Dutton 1998; Gelles 1997). Without contextualization, it appears that battering is a result of a self-esteem problem, a personality disorder, or poverty rather than a result of a sexist patriarchal system. This is problematic because *males or females* can have low self esteem, personality disorders, or be in poverty, but this method fails to address structural advantages that support and reinforce male use of violence (Anderson 2005).

Family violence methodologies may lead to overestimates of female violence (Dobash, Dobash, Wilson, and Daly 1992; Melton and Belknap 2003), and underestimates of male violence. When researchers examine violence within the context of the *family system,* they assume that all involved family members are responsible for part of the violence. Part of this assumption is that victims somehow contribute to the violence, and may imply that female victims deserve the violence because they either nag their partners, or do not stop the violence (Straus et al. 2006). This can normalize the use of patriarchal violence or make it appear as if victims approve of, and contribute to, the violence.

In one such example, family violence researchers talk of a woman who would "taunt" "tease" and "even hit" her husband until he beat her (Straus et al. 2006). This makes it look like the victim is provoking the violence, and deserves the violence. This example overemphasizes the use of female violence and makes it appear as if all victims

instigate or encourage violence. At the end of the vignette, the victim states that she 'provoked' her husband to violence because he did not take control in decision making, by using violence "at least then he will be doing something a man is supposed to do (Straus et al. 2006: p. 191)." This gives the impression that women deserve to be beaten, or even "ask for it." Additionally, it shifts blame from the perpetrator to the victim and normalizes patriarchal violence by indicating that men are "supposed" to use violence to take control.

In another example, Gelles writes, "Nag, nag, nag. When one thinks of victim-precipitated family violence, one often conjures up the image of the nagging wife who finally drives her husband to 'belting her in the mouth'" (Gelles 1972: p. 158). Again, this creates an image of a female who *pushes* her husband to violence. Furthermore, it indicates that if a woman gives her opinion on something that a partner disagrees with, he has the right to hit her.

Another family violence theorist talked about strategies women used to end violence. He stated that no single strategy is guaranteed to stop violence, but almost any strategy or help-source can ultimately work (Bowker 1983). This places responsibility on the *victim*, rather than the perpetrator, to stop the violence. Feminist scholars refute this belief that a woman *can* stop the violence because they place IPA in the context of a gendered social system. The unequal balance of power in the social system gives males an advantageous position. Feminist scholars found that some women might push or hit as often as husbands do, but *it is the women who are beaten up* (Jacobson and Gottman 1998). It did not seem to matter what interventions women used, victims were unable to change their partner's course of action.

Feminist Conceptualization of "Battering"

Feminists employ different conceptualizations of battering than the family violence researchers because they see it in the context of a patriarchal social system rather than in the context of a family system. There are four primary conceptual differences between family violence and feminist conceptualizations of "battering." First, feminists include a wide range of abusive tactics in "battering." Second, feminists recognize nonviolent means of control as battering. Third, feminists recognize that not all violence is "battering." Finally, feminist do not shift the blame for battering to victims.

Feminist definitions of battering incorporate a wide range of violent tactics. Feminists acknowledge that sexual violence, violence from previous relationships, stalking, and violence directed towards other family members or pets with the intention of harming the primary victim are all forms of battering. In addition to violent control tactics, feminist researchers include *nonviolent* control tactics in definitions of battering. Pence and Paymar identify isolation, economic abuse, using the children, intimidation, and using male privilege as nonviolent forms of " battering" or subordinating women and gaining power or control in intimate relationships (Pence and Paymar 1993). By isolating a victim, perpetrators can assure that victims do not have others they can turn to for help to escape the abuse. By using economic abuse, perpetrators assure that if victims want to leave, they will be financially unable to do so. By using the children, perpetrators can threaten that if a victim leaves she will never see her children again. Some perpetrators are able to enforce power differentials simply by intimidation. Although none of these is *violent*, each of them constitutes *abuse* and is a form of coercive control.

By using these nonviolent forms of control, a perpetrator can literally imprison his partner in the relationship (Stark 2007).

These nonviolent control tactics are often reinforced by physical, sexual, or psychological violence if a victim shows signs of noncompliance to the perpetrator's nonviolent methods of control (Johnson 2008; Pence and Paymar 1993; Stark 2007). Recognizing nonviolent control tactics is one tactic feminists use to distinguish between violence and self-defense motivations in defining "batterer." Feminists consider coercion with a motive of gaining power or control over a partner to be "battering."

Feminists acknowledge that not all physical violence is "battering" and do not label everyone who uses violence as a "batterer" (Jacobson and Gottman 1998; Osthoff 2002). Feminist researchers have identified that female aggression is often found to be "resistance to domination" instead of one side of mutual combat (Lischick 1999). Women who use violence are more likely to have been victimized, and to report that violence was in self defense (DeKeseredy, Saunders, Schwartz, and Alvi 1997); this type of "fighting back" is not conceptualized as "battering." This conceptual difference in what it means to "batter" leads feminists to attempt to contextualize violence by motives of self-defense instead of counting all violence as equal.

Feminist theorists recognize that victims may fight back or use physical violence, but may still be the victim (Miller 2005; Sokoloff and Dupont 2005; Stark 2007). Even when they do fight back, it does not change the course of the male's violence (Jacobson and Gottman 1998). Feminists recognize that simply using violence does not make someone a "batterer" anymore than running only to escape danger would make someone "athletic." By identifying motivations behind physical violence, feminist researchers are

able to distinguish between “batterers” and “victims” even when both individuals may use violence. By including a range of violent techniques, a range of nonviolent techniques, and differentiating between motives to control a partner and motives or self defense, feminists conceptualizations of “battering” can distinguish between battering and other uses of violence in a way that other techniques cannot adequately do.

Conceptualizations of Victimization

Family Violence Conceptualization of Victimization

Defining victims of IPA is just as important as identifying batterers. Family violence researchers conceptualize anyone who experienced physical or emotional assault by a partner as a “victim.” Family violence researchers do not assess actions of the “victim” before or during the fight (Romito and Grassi 2007; Straus and Hotaling 1980). They do not consider whether the “victim” instigated the fight, or caused greater harm to the partner. Although I do not believe anyone “deserves” to be harmed, contextualizing violence and self-defense motives could greatly improve current identification of victims. If a woman kicks a man who is trying to rape her, the kick does not classify the man as a “victim.”

Family violence methodologies, specifically the conflict tactics scale (“CTS”; will be discussed in methods section),while adequate for counting how many people may have been harmed or exposed to physical and emotional violence, are inadequate in accounting for several areas where females are disproportionately victimized. The CTS is inadequate for assessing sexual violence, violence after a relationship has ended, stalking, or violence toward pets and family members (Jacobson and Gottman 1998; Stark 2007). By excluding violence types with high female victimization, the CTS ignore areas of

gender asymmetry in IPA. Moreover, when researchers use the CTS and exclude types of violence disproportionately experienced by females, results appear as if IPA is more of a problem of "family violence" than of "violence against women."

Family violence theorists imply that victims do not see themselves as victims, or even believe that they deserve the violence. Gelles reports that there is a tendency of victims to view violence as "appropriate;" female victims are *reluctant to blame* partners for abuse, so they are likely to *say* both persons were to blame. Victims blame themselves or have a tendency not to talk about violence with family or friends (Gelles 1997). Gelles could improve his argument by further discussing the role of gender socialization in victim self-blame. Women are socialized to believe that they are to blame if a relationships fails, and that it is their responsibility to make the relationships work (Anderson 1997). Additionally, female victims may blame themselves because the perpetrator has blamed them so many times in the past (Pence and Paymar 1993). Women may tell family or friends, only to have the confidant blame the victim for the perpetrator's violence. There is a socialized blaming of females in the proverbial question of "Why does she stay?" rather than "Why does he hit her?"

Feminist Conceptualization of Victimization

Feminist conceptualize victimization differently than family violence theorists do. Feminist researchers include sexual violence, assault, and violence after separation, and stalking in definitions of victimization. National survey research found that women are overwhelmingly the victims of rape and physical violence; 25% of women and 8% of men surveyed reported being raped or physically assaulted by a current or former intimate partner over the lifetime (Tjaden and Thoennes 2000a). For men, these reports of

rape could also include rape by a male partner. Examination of assault data reveal that about 76% of all assaults take place after a separation or divorce and that males are perpetrators in 93% of these cases (Davies, Ford-Gilboe, and Hammerton 2009). The Bureau of Justice Statistics estimated that nearly 20% of women are assaulted after leaving relationships (BJS 1984; Statistics 1984). Additionally, men are more likely to stalk ex-partners than are women (Melton 2000). By including these types of violence to classify "victims," feminist researchers more accurately identify a larger number of female victims.

In addition to physical and sexual victimization, feminist researchers assess emotional response to violence in definitions of victimization. Women are more likely to fear their partners because husbands have a unique ability to use violence to produce fear (Jacobson and Gottman 1998; Sokoloff and Dupont 2005). This is an indication that male and female use of violence may be qualitatively different from each other.

Theories of the Debate

Family Violence Theoretical Conceptions

As important as the differences in definitions and key terms used by family violence and feminist researchers are differences in the theoretical lenses they use to explore IPA. Family violence researchers often use social learning theories to explain IPA causes, while feminist theorists often use resource theory and feminist theory to explain IPA causes and means of perpetuation. This section will address theoretical viewpoints of both groups.

Family violence theorists often use social learning theory to explain why violence persists in American families. Social learning theory explains that socialization causes

violence. More specifically, social learning theory explains that individuals learn behaviors through watching others, remembering what they see, and reproducing the witnessed behaviors (Bandura 1986). According to social learning theory, individuals do not just repeat any behavior; individuals repeat behaviors that receive rewards instead of behaviors that receive punishments. When applied to IPA, social learning theory explains that individuals witness violence, remember the violence, and reproduce the violence. Sociological theories explain that social learning can take place at a macro and micro level. The following section will explain how family violence theorists use culture of violence theory (macro), and intergenerational transmission of violence theory (micro), to explain causes of IPA.

From social learning theory, culture of violence theory emerged to explain the macro level causes of individual violence. Culture of violence theory explains that because society is violent, individuals learn that violence is acceptable (Gelles and Straus 1979; Levine 1986; Walker 1979) Levinson's work illustrates that norms that supported equality of men and women can create subcultures of nonviolence, while norms that support patriarchy and subordination of women by men can create subcultures of violence (Levinson 1989). However, the culture of violence theory fails to identify a "subculture" that values violence. Research using national samples shows that neither SES nor social class values are associated with violence. Research indicates only weak associations between attitudes and violence behavior because of the *intrapersonal* nature of values and the *interpersonal* nature of violence (Ball-Rokeach 1973). Thus, while aggregate level analysis, including Levinson's work, draws connections between social factors and violence, it is not possible to identify individual values that cause violence in

these studies; one can only imply that culturally based values correlate to violence or nonviolence.

Family violence researchers who use culture of violence theory stop short of discussing gendered differences in socialization toward violence. It is not enough to say that men learn to be violent; it must be added that men are socialized to direct their violence toward women and children (Price 2005). Conversely, social roles teach women to be submissive (Walker 1979) and prohibit women from aggressively targeting male partners (Das Dasgupta 2002; Renzetti, Curran, and Carr 2003). Although this gendered learning of violence by males and nonviolence by females is "socially learned," researchers who address gender in socialization tend to identify themselves as "feminists" throughout the literature. This means that while feminist researchers have analyzed socialization of violence by gender, social learning theorists do not typically analyze gender. From Prospero's work, I give a representative example of the viewpoint expressed by several family violence researchers who use social learning theories. Prospero states:

> The acceptance of violence to address conflict is entrenched at all levels of our society, and thereby permeates our family systems. Therefore, according to this perspective, all family members are susceptible to this socialization of violence and therefore, women are just as likely as men to be perpetrators or victims of IPA (Prospero 2008: p. 195).

As is evidenced by this quote, family violence researchers do not see the issue of gender as central to social learning theorist explanations of IPA. By nature of how researchers classify themselves and others, researchers who use *gendered* social learning theory are classified as feminist.

Family violence researchers may also use intergenerational transmission of violence theory to explain IPA. This is a micro-level social learning theory. According to this sub-theory, the causes of IPA perpetration are witnessing parental violence as a child, and then repeating this violence as an adult. Perpetrators of IPA learn as children that violence is an acceptable response to relationship discord. Perpetrators use violence as a result of both social learning and structural factors (including poverty) (Gelles 1972). Empirical research supports intergenerational transmission of violence theory in that parental violence and severe marital aggression are more strongly correlated than is being hit as a teen. This research, however, was not sex- specific, so cannot address differences in how males and females learn and reenact violence (Kalmuss 1984).

There are several flaws to the intergenerational transmission of violence theory. It cannot explain why there are low rates of violence in relationships where adults experienced childhood violence. Many individuals who witnessed parental violence do not participate in spousal aggression as adults. There are actually more deviations from an intergenerational violence transmission than conformities to it (O'Leary, Van Hasselt, Morrison, Bellack, and Hersen 1988). Case studies of intergenerational transmission of violence often have no control group; it is unknown what portion of *nonviolent* people also witnessed violence as children. Recent research examining over 520 couples (including a control group) found that 53% people who were abused do not use violence as adults (Herrenkohl, Herrenkohl, and Toedter, 1993). This means that intergenerational transmission of violence is not a necessary, or sufficient, cause of violence. Additionally, evidence in inconsistent on women's learning of violence. Gelles portrays this in his work. He stated,

> Wife battering is related to experiences with violence. Individuals who have experienced violent childhoods are more likely to grow up and assault their wives than men who have not experienced childhood violence... The evidence for women is inconsistent, and it is not clear whether women who observe their parent's violence are likely to become violent adults (Gelles 1997: p. 84).

Perhaps the evidence would be clearer in the context of a gendered social system, or gendered differences in social learning. Family violence researchers do not delve further into finding explanations of why men and women would use violence differently or learn violence differently. Therefore, intergenerational transmission of violence only weakly explains why some boys may become violent. Because intergenerational transmission of violence theory lacks an analysis of how resources or gender influences violence learning, it cannot explain why men have higher rates of violence than women do. Additionally, intergenerational transmission of violence does not take into account the effects that negative emotional health, physical health, and behavioral outcomes from intimate partner abuse may have on children (Davies 2005; Kitzmann, Gaylord, Holt, and Kenny 2003; Kolbo and Blakely 1996). The theory seems to assume that children are rational actors who decide to mimic the actions of the person who is most powerful in the relationship.

In summary, social learning theory has several weaknesses that make it less than ideal for research in IPA. Learning is not the same as performing. People can learn behaviors when they observe them, but not perform them until a later time, or not at all (Kretchmar 2008). Many individuals grow up in nonviolent homes and still become violent. Others grow up in violent homes and choose not to use violence; social learning theory does not adequately address these issues. Gelles responds to this argument by saying that violence is a function of structural stress *and* preconditioned violence

through social experience (Gelles 1972). In other words, he argues that individuals who grow up in violent homes may not have the same structural stresses, so may remain nonviolent. However, this still does not address why some who grow up in violence free environments use violence in intimate relationships.

Social learning theories fail to recognize the role of structural means and structural gender inequality that make perpetual IPA perpetration possible. Because of these shortcomings, research that only identifies with social learning theory to explain IPA is incomplete because it lacks an analysis of structural gender inequalities that lead to differential learning of violence. Additionally, it incompletely explains why some individuals use violence, while others do not, in situations where learning environments do not parallel actions.

Feminist Theoretical Conceptions

Feminist researchers often use a combination of feminist (or conflict) theories and resource theories to explain the causes of IVP and the IPA perpetuation. Both resource theory and feminist theory can examine the social learning of violence in relationships, and the unequal balance of power in violent relationships.

Conflict theory is based on the assumption that not all behaviors within families contribute to the good of the family, and certain elements of culture and society can lead to irritations or stress in the family (Witt 1987). Feminist versions of conflict theory focus on unequal power differentials between men and women, and on the socially prescribed practices that keep women in positions of subordination in the family and in society (Lamanna and Riedmann 2009). Some researchers see feminist theories of intimate partner abuse as an extension of conflict theory.

Feminist theory explains that the patriarchal social system supports structural gender inequalities and allows IPA perpetuation. Feminist theory focuses on social structure, socialized gender roles, socialized use of violence, and socialized pairings as the primary means of IPA perpetuation in our society.

According to feminist theory, IPA is perpetuated because men, who enjoy structural power, organize themselves and distribute resources in ways that enforce subordination of women (Anderson 2005). One example of structural subordination is government use of welfare money to sponsor "marriage initiatives." Through marriage initiatives, the government promoted marriage among poor women in hopes of alleviating female poverty. The Bush administration authorized a 1.8 billion dollar investment over 6 years to encourage marriage of more than 2 million low-income single moms. An estimated 1/3 of these women were in relationships with ongoing abuse (Sokoloff and Dupont 2005). Marriage initiatives reinforce patriarchal subordination of women because they do not provide resources to women in need of economic aid. Instead, they portray the message that if women follow socialized gender roles by depending on men, they will escape poverty. Educational programs or job training programs could have used these funds to alleviate female poverty, but instead they money was allocated to marriage initiatives that reinforce female dependence on male economic support. For women in violent relationships, social reinforcement of patriarchy through marriage initiatives is a means by which society creates social and economic barriers to escaping violence. Abused women need support to escape unhealthy and abusive relationships, not incentives to stay in them (Scott et al. 2002).

In addition to gender inequalities that result from social structures, feminists emphasize that patriarchal social systems create gender role differences where men have the greater portion of power and resources, which they use to maintain subordination of women. Social structures work in conjunction with traditional gender roles by financially entrapping women in abusive relationships or, at minimum, by making it more difficult to leave than it would be in a equitable society (Johnson 2008). If women leave relationships, they do so at a financial disadvantage, with great caretaking responsibilities that are not equal for men who leave relationships (Scott et al. 2002). One study estimates that the income-to-need levels of formerly married mothers is only 56% that of their former husbands (Bianchi, Subaiya, and Kahn 1999). Part of this difference is due to excess female caretaking responsibilities that limit time availability for paid work, and part is due to the wage gap in society.

Additionally, patriarchal gender ideologies teach men to be violent and neglect to teach women to use violence. Men are trained from childhood to fight, while girls are trained to nurture and support boys so boys can be successful (Walker 1979). Violence is a resource for constructing masculinity, and using violence has different meanings and outcomes by gender. When boys use violence, they are rewarded; when girls use violence, they are punished (Chapman and Gates 1978). Socialized gender roles teach men violence and socialize men to be aggressive, and then couple them with women who are not taught violence. Men are given ‘appropriate’ hierarchical power with ‘rightful’ authority in a relationship with a woman who is probably smaller, younger, and less educated (Dobash and Dobash 1979). This creates a social system that perpetuates and supports violence of men against women. The ideology is further enforced because

females who do not subscribe to the gendered roles of submission, or who try to defend themselves against violence, may be labeled “perpetrators” and denied victims services.

In addition to male advantage in learning violence, socialized ideals of mate selection promote male supremacy by giving men a size and strength advantage in relationships, which translates into size and strength advantages in IPA. It is the norm for men to marry women who are younger than them, smaller in stature, have less education, and have less earning potential. This translates to men being able to physically, economically and psychologically dominate their partners (Anderson 2005). So, when push comes to shove (no pun intended), men have more physical strength, more resource power, and a greater ability to force, and enforce, female submission.

Feminist theory has several strengths that make it ideal for studying IPA. Feminist theory explores how social structures and gender roles support violent relationships. Feminist theory is the ideal theory for explaining the structural support of IPA. Feminist theory, however, is weak in explaining why some men in patriarchal societies are violent while others choose not to be violent. Research of gender as an ideology or social construct, rather than a sex-variable of “male” or “female” has progressed understanding of how individual gender roles can lead to violence.

Feminist theories explaining gender differences often hinge on the idea that gender is socially constructed, then upheld by positive reinforcements, punishments, social pressures, and rituals. The social construction of “masculine” and “feminine” varies by culture, and definitions of socially appropriate gendered behaviors can vary over the life course (Kimmel 2008). Men and women do not simply learn gender. Men and women “do” gender by interacting with others and society. When individuals “do

gender (Anderson 2005: 856),” they create masculinities and femininities. For example, in the case of IPA, part of male construction of “masculinity” is securing dominance over females. When male identity is threatened by lack of dominance over females, men may attempt to reconstruct masculinity by securing power through abuse or violence (Anderson 2005).

Gender socialization involves an unequal distribution of power between genders wherein men, as a group, have power over women, as a group. This unequal distribution of power by gendered group produces many of the gender differences that feminist theorists research (Kimmel 2008). History and tradition unequally distribute power by gender. This is as true in society as in the family. Social roles teach women to obey husbands, to be subservient, and to put family needs before their own. On the other hand, social roles teach men to wield power in families, and to use violence and force when necessary to remain in power. Socialized gender pairings, socialized divisions of labor in the household, and socialized allocation of resources with greater rewards accompanying typical “man’s work” are each means through which men are able to hold power in families and societies (Anderson 1997).

IPA is a result of cultural gender socialization, and is culturally linked to male dominance and control in the society in which it takes place (Levinson 1989). Violence against women is not a recent phenomenon, but it has only been in recent history that it was viewed as a social problem, a health problem, or a legal problem (Pleck 2004). The feminist perspective on IPA rests on the idea that gender inequality and the socially constructed patriarchal system in which we live is at the root of violence in intimate

partnerships. Contextual understanding of the gendered social structure is necessary for examination of gendered violence.

One unifying theme in feminist research is that male dominance in society is oppressive to women (Kimmel 2008; Yllo and Bograd 1988). A primary source of power is access to resources. This can include, but is not limited to financial resources, social resources, or legal resources. It is within the assessment of resources and power that there is overlap in resource and feminist theory.

According to resource theory, resources affect men and women in different ways. Resource theory conceptualizes violence as 1) a force individuals use if they lack resources, and 2) an alternative resource that can be used by men who may fall short in other resources (Atkinson et al. 2005). Generally, men have advantages in access to both power and resources. When men are deficient in resources, they use violence to secure power that they cannot secure through resources (Anderson 1997). Research showing that resource-poor men are likely to use violence, while resource-rich men are less to use violence in relationships (Allen and Straus 1980) supports this theory. However, other research suggests that resource rich men may be better able to hide their violence, or that women who contribute a greater portion to the family income are at greater risk of being injured by a spouse or partner (Salari and Baldwin 2002).

The pattern of resource allocation and violence use is not the same for women. Unlike males, females are usually a resource-deficient group. Empirical research indicates that for women, there is hardly any relationship between female resources and female use of violence within the intimate relationship (Allen and Straus 1980). For women, lack of resources leads to a structural inability to escape violence, not a

propensity toward violence. We find an evidence of this in a study of a domestic violence advocacy center in Ohio that found women who returned to violent relationships did so because of lack of resources. More specifically, women returned because they: lacked money (46%), lacked a place to go (28%), or lacked police help (13%) (Anderson, Gillig, Sitaker, McCloskey, Malloy, and Grigsby 2003). Additionally, research demonstrates that even when women lack resources, they are not prone to use violence to secure power (Allen and Straus 1980). Each of these factors indicates that women have inadequate access to macro and micro level resources to maintain independence after escaping a violent relationship. One critique of resource theory is that it indicates that women are in danger whether they are resource rich or resource-poor; the relationship between female resources and violence is weak (Allen and Straus 1980). Relative resource theory and gendered resource theory help to explain this discrepancy.

Relative resource theory is an extension of resource theory. It explains that men use violence when they have fewer resources *in relation to* their partners (Anderson 1997; Atkinson et al. 2005; McCloskey 1996). In other words, if women have more resources than their partner does, men can use violence as the "ultimate resource" to regain power and reinforce unequal resource structures (Allen and Straus 1980). Research showing that men who earn less than their wives are more likely to use violence (O'Brien 1971) supports this theory. Additional evidence shows females who contribute a larger part of the family income are more likely be victims of injurious physical aggression (Kalmuss and Straus 1982). This is interesting because it portrays that men use violence when structural gender inequalities shift and put men at the disadvantage. Due to structural differences in gendered resource allocation, and because of relative size

differences between men and women, women cannot use violence as an "ultimate resource" in the same way men can. Even for women who are resource-rich, men can gain power by using violence to keep women in their subordination (Atkinson et al. 2005). Women have no similar ability to command power in the family.

In some cases, family violence theorists also use a version of relative resource theory to explain why violence happens in families. Straus, Gelles, and Steinmetz acknowledge that in families with violent males, men who lack other resources may use violence to "get their way". They even acknowledge a sexist economic structure. However, they assume that females are "rational actors" in remaining in violent relationships. They write,

> Without access to good jobs, women are dependent on their husbands. Consequently, many women continue to endure physical attacks from their husbands because divorce means living in poverty (Straus et al. 2006: p. 206).

This approach fails to acknowledge that if women are violent, men are not asked to decide between being beaten or living in poverty, fails to acknowledge gender differences that give men advantages in using violence, and fails to acknowledge that women cannot use violence to "get their way" whether they have resources or not. The approach simply fails to acknowledge socialized gender roles and patriarchy that leave women at the mercy of violent men.

Gendered resource theory takes relative resource theory one-step further by demonstrating how gender *ideology* can cause a resource-poor man to choose violence and another to choose nonviolence. According to this theory, *traditional* males are likely to use violence to secure power in intimate partnerships, but men with nontraditional gender ideologies are not likely to use violence. Empirical research has shown that men

who hold traditional gender ideologies are more likely to use violence to gain power over a resource-rich partner than men who hold nontraditional ideologies (Atkinson et al. 2005). Men who *want* to be the primarily breadwinner and want their partners to perform traditional feminine gender roles are likely to use violence as a way of reestablishing power differentials and male control in the relationship. This supports feminist claims that patriarchal social structure supports subordination of women. Additionally, gendered resource theory demonstrates that socialized male gender roles can lead to violence if the gender roles define masculinity as being more powerful than women are.

Resource theories have several strengths that contribute to understanding IPA. These theories make clear that only men have access to violence as an "ultimate resource," so IPA can never really be "gender symmetrical." Relative resource theory explains how women can be disadvantaged whether they have many or few resources, and gendered resource theory explains that gender ideology can influence use of violence as a resource. Future research should continue to assess the role of gender ideologies, as feminists present it in gendered resource theory, to understand why some individuals use violence and others do not.

In summary, feminists explain that systemic patriarchal power, sustained through gendered social structures, gendered socialization, and gendered resource allocation, supports violence against women. Violence is not the only means that men may use to control women, but use of violence can reinforce and strengthen other means of control. Understanding social construction of gender that supports male dominance and superiority in intimate relationships is the key to understanding violence against women.

Research Methods of Family Violence and Feminist Researchers

Just as family violence and feminist researchers differ in their conceptual and theoretical approaches to studying family violence, they also differ methodologically. This section will identify the ways in which conceptualizations and theoretical backgrounds have shaped the methodological approaches of the two groups, and discuss the strengths and weaknesses of each approach.

Gendered Methods and Results of Family Violence Theorists

Family violence theorists often use data from large national phone surveys, such as the National Family Violence Survey. The primary strength of this methodology is that the sample can be nationally representative, large, and is not as expensive as face-to-face interviews. Furthermore, qualitative interviews with the same sample size are not possible, so these methods allow larger sample size than qualitative methods. However, these types of surveys are problematic for measuring IPA because abused women may decline to answer the survey, or a perpetrator may answer the phone if he is monitoring phone calls. Likewise, if a perpetrator monitors a female by calling her frequently when he is away, the female would want to avoid a long phone survey. If the batterer is home, a female victim would minimize abuse or chose not to take part in study (Belknap and Melton 2005). This creates a sampling bias that could exclude female victims of severe IPA from the research.

Family violence methods measure “gender symmetry” as an equal number of men and women who use verbal aggression or physical violence in a current relationship. Because family violence definitions of “gender symmetry” do not contextualize gender, or account motivations, meanings, or outcomes, neither do family violence methods.

Gelles and Straus, two pioneer researchers in family violence, developed a scale called the "conflict tactics scale (CTS)," which is used by most family violence theorists to measure IPA in survey research. Some feminist researchers also employ this scale. Family violence theorist's view - and measure - gender as an individual characteristic by simply tallying sex frequencies. This section will explain the structure and methodological shortcomings of the CTS.

The CTS is a list of actions that one partner may use in conflict against another partner. Use of the CTS consistently results in gender symmetry (Fiebert 1997), defined as an equal number of men and women use violence over a year. The CTS overlooks the significant differences in the *number of times* men and women perpetrate or inflict injuries over the course of a year (Melton and Belknap 2003). By failing to account for gender beyond sex frequencies, the CTS does not acknowledge structural gender inequalities.

The CTS carries the assumption that battery is result of an argument. When the CTS frame questions about violence, it frames them in the context of a couple arguing. To quote from the CTS (italics added):

> No matter how well a couple gets along, there are times when they disagree on major decisions, get annoyed about something the other person does or just have spats or fights because they are in a bad mood or tired or for some other reason. They also use many different ways of trying to settle their differences. I'm going to read a list of some things you and your (wife/partner) might have done when you had a dispute... (Straus et al. 2006: p. 256).

The result of framing the question of violence in the context of a "being tired" or as a "spat" is that violence in other contexts may go unreported. Not all violence takes place because of an argument. In many violent relationships, the violence may be part of a

general pattern of control, unrelated to an argument, disagreement, or annoyance. However, framing violence in the context of an argument is ideal for capturing situational couple violence of a current relationship because the CTS is defined as an argument that became abusive (Johnson 2008).

The CTS does not acknowledge violence from previous relationships. This is a significant error because national survey research has identified that violence from previous partners is a significant risk for women (Tjaden and Thoennes 2000b). Moreover, a female's risk of homicide increases by about 50% when women leave relationships (Kimmel 2002). Although research has continually shown that violence after a relationship ends is a significant risk for women, the CTS persistently omits this measure of violence.

The CTS does employ a rough scale of "more severe" or "less severe," but the assumption that the scale is always correct is problematic. It does not acknowledge that women's acts may be considered "more severe" because they may have to use greater force, or weapons, to escape violence due to gendered size and strength differences (Miller 2005).

Furthermore, the CTS does not measure sexual violence. Women are the majority of victims of sexual abuse, while men are the majority of the perpetrators (Tjaden and Thoennes 1998; Tjaden and Thoennes 2000b). This is problematic because gender may appear "symmetrical" in family violence research simply because the CTS excludes sexual violence and other forms of violence where men disproportionately victimize women.

A major weakness of the CTS is that it does not account for initiation of violence, nature of overall relationship, or the meanings and motives behind violent acts (Kimmel 2002). The CTS has no way of measuring a self-defense motive in IPA. The CTS cannot tell researchers why people use violence, how hard they hit, or whether they are violent to try to escape. Without context, it is impossible to see that violence motivations and meanings are not gender symmetric.

The CTS does not have an adequate measure of injury. Conceptualizations of gender within family violence do not account for size differences or differences in violence training by gender. However, research using the CTS in conjunction with a detailed injury questioner found that only 20.7% of men who report victimization report at least one injury, while 39.2% of women report injury from most recent incident. Gender differences was significant at $p<.001$ (Arias and Corso 2005). This example illustrates that when researchers examine "gender symmetry" data with inclusion of injuries or outcomes of the violence, it no longer looks symmetrical.

The CTS does not account for any differences in reporting of violence by men and women. A popular notion among some family violence researchers is that that men may be less likely to call the police or seek medical attention, or even report abuse because of the shame of being attacked by a woman (Archer 2000; Steinmetz 1977). However, research does not support these notions. The section on feminist methods will address and refute these notions.

It is important to examine violence reporting in the CTS. The CTS asks respondents to recall arguments from the past 12 months. This kind of retrospective recall could be very different for men than for women. If we can return to the example earlier of

the runners, imagine the reliability of memory recall if one person only runs when she is in great danger. She is likely to recall details of the experience including where she was, and why she ran. If someone uses violence to escape danger, she is more likely to remember every time she used violence because it would have been so out of the ordinary for her. Compare that to someone who runs on a daily basis. He may only recall a few specific runs, and he is more likely to underreport, or overlook several of the runs that he felt were insignificant. The retrospective nature of asking for recall of 12 months of violence likely makes this measure inaccurate.

The revised CTS (CTS2) has several updates and changes to control for some of the above-mentioned problems. For example, the CTS2 has measurement for injury and a limited sexual coercion measure (Straus, Hamby, Boney-McCoy, and Sugarman 1996). The CTS2 also changes questions to be more gender neutral, and to "better differentiate between minor and severe levels [of violence]" (Straus et al. 1996: p. 283).

Unfortunately, there is still not an accounting for coercive control, threats to friends, family, or pets. The CTS2 assumes that arguments cause violence, and does not acknowledge motive or violence from past partners.

In summary, the CTS explore IPA only through frequencies of men and women who report using violence in an argument over the course of a year. It does not measure every aspect of IPA. It does not show that men and women are equally violent. Findings of the CTS do not show symmetry of behavior, only symmetry of measurement (Straus et al. 1996) based on oversimplified conceptualizations of gender, perpetration, and victimization.

Feminist Research Methods

Feminist researchers typically use data from shelters, criminal justice reports, police records, hospital or clinical records, and consistently find that IPA is gender asymmetrical. Methods often include interviews or survey research at places where victims go to receive services. Feminist research methods also reveal asymmetrical violence using large national phone surveys, which are prone to lower reporting of violence by both men and women, who may not agree to be interviewed, or who may be more difficult to locate in later waves of longitudinal surveys (Belknap and Melton 2005; Salari and Baldwin 2002). The difference in whether national surveys are symmetrical or asymmetrical in research results comes down to whether the CTS is used or not. Where asymmetry is found, the CTS is either not used, or is used in conjunction with other tools that measure the aspects of violence neglected by the CTS (Bachman and Saltzman 1995; Romans et al. 2007; Tjaden and Thoennes 2000a).

Feminist methodologies show asymmetrical violence using a variety of data sources, research methods and tools. Instead of simply counting use of violence in the year, feminist interviews and surveys address context, injuries, frequencies, sexual violence, violence in past relationships, and gendered reporting differences. By exploring a range of violent behaviors and contexts, feminist researchers present a more complete picture of violence in intimate relationships.

Feminists use a variety of techniques data to measure violence. One example is called “Women’s Experiences with Battering” (WEB), and is often used in conjunction with the CTS. The WEB can examines feeling unsafe, trying not to make partner upset, feeling imprisoned by partner, fearing partner, or being terrified by partner. Research

including both male and female respondents indicates that females were five times more likely to disclose high rates of battering. Even women who disclosed both perpetration and victimization were more likely than men to have higher WEB scores (Houry, Rhodes, Kemball, Click, Cerulli, McNutt, and Kaslow 2008). If WEB had not assessed a wide range of abusive tactics, it may have missed some of the important and significant differences between male and female experience with violence. This demonstrates the importance of researchers using additional tools to assess violence if they use the CTS. By combining the CTS with other tools, feminists are able to better assess a full range of violence and victimization.

Feminist research suggests that men and women report violence differently. Research results demonstrate that men who are assaulted by intimates are actually more likely to call police, press charges, and less likely to drop charges; abusive men typically deny and excuse their own violence (Kimmel 2002). These findings are supported by research of National Survey of Family and Households that found women more likely than men (1.1 to .2%) to report that the woman was injured, and that the man was injured (.4 to .2%) (Brush 1990). This exemplifies both that men and women report violence at different rates, and that it is important to identify who is reporting the violence or compare violence reports if both spouses have responded.

There are several social reasons for gendered reporting differences. While both men and women are likely to see violence as gender nonconforming, the consequences of this lead women to remember every act of violence and report more often. This leads women to overestimate violence and underreport victimization (Dobash and Dobash 1998). Conversely, violence is seen as masculine in Western cultures, but violence

against women is seen as cowardly, so men minimize and deny violence against female partners (Anderson 2005). Instead of accepting responsibility for violence, male offenders twist less serious female partner's behavior into major violence and excuse their own behaviors as rational or nonviolent (Anderson and Umberson 2001). Moreover, the perpetrator often sees himself as a victim, which may lead violent men to over report victimization (Dobash and Dobash 1998).

When researchers consider the implications of gendered reporting differences, it is clear that gender of the respondent needs accounting for in future research. Although it is not possible to know who is telling the more accurate story, it is possible to conduct analyses on gendered reporting differences in the sample. This may help to clarify gendered differences in future research.

One area where feminist research methods are deficient is in examination of SCV. Although feminist research has provided abundant evidence of the role of gender in severe violence, it has neglected to research couples experiencing less severe violence, or couples where both individuals report using violence. This scarcity of feminist research of situational couple violence (SCV) has created a research gap wherein researchers really know very little about the role of gender in SCV.

The extent of gender differences for these couples is largely unknown because most research of SCV uses the CTS, and most samples of SCV are in data studied primarily using family violence conceptualizations of gender, gender symmetry, victimization, and perpetration. One exception is Salari and Baldwin's longitudinal analysis of violent couples from the National Survey of Family and Households data. These researchers used a more complex assessment of gender roles, and found that

couples with traditional gender roles experienced higher violence than couples with nontraditional gender roles (Salari and Baldwin 2002). The unit of analysis of their research was the "couple" rather than the individual, and the authors suggest future research addressing gender differences in violence. Other research indicates that within SCV, men report engaging in more frequent violence than women do. While women are more likely to report being injured or fearing for their personal safety (Johnson 2008). These limited findings signify that SCV may not be as "gender symmetrical" as current findings by family violence researchers indicate.

Future Directions for Researching Situational Couple Violence

Johnson acknowledges that SCV *"can* have long-term, serious psychological effects and that we need to investigate the conditions under which it does" (Johnson 2008: p. 70); yet, current research of SCV fails to do this. Because of inadequacies of current conceptualization and methods used to research SCV, and a neglect of SCV research by feminist research, both parties have neglected to assess violence among "situational couple violence" couples.

Moreover, neither side has adequately tested the assumption that SCV is somehow less "gendered" than other types of family violence. Family violence theorists gloss over possible gender differences in SCV. Their conceptualizations of gender, gender symmetry, victimization, along with use of the conflict tactics scale, limits results by largely ignoring motivations, meanings, and outcomes of SCV. Both instrumental flaws of the conflict tactics sale and conceptual or methodological weaknesses of family violence researchers are a significant barrier to a complete assessment of either long-term effects of abuse in SCV or the role of gender in SCV.

Feminist theorists typically avoid studying situational couple violence in large data sets because of low levels of violence and surface-level "gender symmetry" indicated by family violence findings. Data selection typical of feminist research has led feminist researchers to neglect research of SCV. Because researchers typically use family violence methods to study SCV, feminist researchers have neglected to identify the role of gender in this type of violence.

There are several areas where current research inadequately measures violence outcomes or the role of gender in SCV. Many of these inadequacies stem from instrumental data flaws often present in data used by family violence researchers wherein the CTS or other data instruments did not include questions pertaining violence from past relationships, violence severity or frequency, violence outcomes, gender, or types of violence that are not gender neutral. Two primary areas where researchers can improve SCV research are an assessment of health outcomes for individuals who experience SCV, and a complete assessment of whether gender influences these outcomes.

Current research neglects to measure violence outcomes adequately. Without measuring violence outcomes, violence may appear "symmetrical" even if injuries or other outcomes are not symmetrical. Recent feminist research identifying that IPA as a health problem opens doors for examining the health outcomes of violence in some data sets. Feminist research indicates that *severe* IPA victimization is associated with gender differences in injury, poor emotional health outcomes, and poor physical health outcomes. However, current research by feminist researchers has neglected to assess gendered differences in health outcomes of *less severe* IPA, or of IPA when both

members of a couple use violence. Studying health outcomes in violent relationships is one way to assess if there is gender symmetry in outcomes of IPA.

Current research of SCV has not examined physical or emotional health outcomes of SCV beyond the immediate effects of violence injuries. An assessment of health outcomes may be an avenue through which IPA researchers can identify "victims" if there is not a measure of motives or self-defense in the violence. Where current research of SCV typically lacks measurement of motives, and where it is difficult to distinguish victims from perpetrators, violence can appear to be "gender symmetrical" even if one person uses violence for self defense. However, if one person primarily experiences the negative mental and physical health effects that are a result of violent victimization, some researchers may assume that person is the primary victim of violence. Additionally, finding that one gender suffers poorer outcomes because of violence would be an indication that SCV is not "gender symmetrical" in meanings of violence or outcomes of violence. I will explain the link between health outcomes and violence victimization in the next chapter.

Current research lacks a complete assessment of gendered violence or gender in IPA. Research examining SCV often neglects to measure sexual violence or violence from past relationships. Women are more often victims of sexual violence and violence from previous partners, so ignoring these types of violence may lead to an inaccurate perception of symmetrical results. "Gender symmetry" findings of family violence researchers stem from these instrumental problems, coupled with limited conceptualizations of "gender symmetry," "battering," "victimization," and "gender," within family violence methods.

Conclusions

In conclusion, Johnson's theory that differences between family violence and feminist researchers is due to data sample choice is incomplete without examination of instrumental data differences and examination of conceptualizations of "gender symmetry," "gender," "victimization," and "battering," that influence research results. Furthermore, researchers have not adequately tested the assumption that SCV is less gendered than other types of violence.

Because of differences in data sampling techniques, instrumental data differences, and conceptualizations, family violence and feminist researchers have reached a deadlock in the debate over gender symmetry. So long as the two groups continue to examine IPA using the same data sampling techniques, data instruments, conceptualizations, and methodologies that they have in the past, the debate will remain at a standstill.

Current research of SCV is lacking a thorough examination of victimization, perpetration, outcomes, and gender. One way to overcome this research gap is to use feminist conceptualizations of these key terms to explore gender symmetry in SCV as represented in a large national data set similar to data that family violence researchers primarily use. By so doing, feminist researchers could identify outcomes of SCV, clarify the role of gender in SCV, and examine the effects of conceptual differences and data choice on findings

Limited research of gender in SCV indicates that SCV is asymmetrical in that men engage in violence more frequently, women are more likely to be physically injured, and women are more likely to fear for their safety or suffer psychological consequences from violence (Johnson 2008; Kimmel 2002; Morse 1995; Saunders 2002). However,

research to this point has been unable to reconcile these findings with family violence research indicating that men and women experience gender symmetrical violence in SCV. Previous researchers have suggested that research may benefit from integrating the approaches of family violence and feminist researchers when studying IPA(Anderson 1997). This research will integrate the two approaches by applying feminist research methods to typical family violence data. So doing allows feminist researchers to determine whether "gender symmetry" findings of family violence researchers is a product of large national data sample alone (as Johnson suggests), or whether instrumental data flaws and family violence conceptualizations also contribute to the findings.

The purpose of this research is twofold. The first purpose is to examine SCV using feminist contextualization, conceptualizations and methodologies to determine if there are gender differences in SCV, and more specifically, in the health effects of SCV. Previous research by both family violence and feminist researchers has failed to address these issues adequately.

The second purpose of this research is to progress the gender symmetry debate by identifying whether family violence and feminist researchers find different results of gender symmetry and asymmetry due to data sample type (national sample vs. agency samples), as is suggested by Johnson, or because of a combination of instrumental data flaws and theoretical conceptualizations, as I theorize. By applying feminist conceptualizations of gender symmetry, gender, and victimization to a large national data set primarily composed of SCV couples. This research will examine whether feminist

contextualization, conceptualizations, and methodologies reveal gender asymmetry when applied to data typically used by family violence theorists.

Chapter 2 of this dissertation is a review of findings, strengths, and weaknesses in existing literature of health effects of IPA. Chapter 3 of this dissertation includes a full description of research methods, and a discussion of data limitations. Chapter 4 reports the findings and results of data analysis, and Chapter 5 is a discussion of the results, along with conclusions drawn from this research.

CHAPTER 2

LITERATURE REVIEW OF HEALTH EFFECTS OF IPA

Introduction

Amidst disputes in defining and measuring IPA, both feminists and family violence researchers agree that IPA is a social problem. Many researchers and policy makers are just beginning to understand the extent to which IPA is also a health problem. Framing IPA as a health concern exposes costs and consequences that were previously unacknowledged. Both health expenses and health outcomes resulting from IPA are a burden on society; excess health care costs due to IPA were estimated at $5.8 billion in 1995 alone (Max et al. 2004). Moreover, women exposed to IPA report health care utilization 20% higher than women not exposed to IPA did, even 5 years after abuse had ceased.

In addition to health care costs, IPA has health consequences. Some public service campaigns portray young women with black eyes or bruised faces to demonstrate the injury effects of violence in relationships (United Kingdom Domestic Violence Hotline, 1997). What most people are unaware of is that beyond injuries incurred through violence, IPA is correlated to poor physical health, poor emotional health, and decreased access to health care (Black and Breiding 2008; Campbell and Lewandowski 1997; CDC

2008; Mitchell 2004; Arias, Arriaga, and Oskamp 1999; Wu, El-Bassel, Witte, Gilbert, and Chang 2003).

Unfortunately, in reframing IPA as a health concern, current research often fails to identify the mechanisms, beyond physical injuries incurred in violent episodes, through which IPA leads to poor health outcomes. Viewing IPA with an understanding that social factors can affect health outcomes is necessary to make the connection between IPA and poor health outcomes less ambiguous. Research by social epidemiologists identified that social factors, (including low social support, stress, and lack of access to resources), can each lead to negative health outcomes (Berkman and Syme 1979; Marmot and Wilkinson 1999). Research reveals that victims of IPA experience higher stress, fewer resources, and lower social support than nonvictims do (Brownridge 2009; Houry et al. 2008; Kalmuss and Straus 1982; Stark 2007). Additionally, current research of IPA identifies that victims of IPA are at risk of poor health compared to nonvictims (Coker, Davis, Arias, Desai, Sanderson, Brandt, and Smith 2002; Coker, Smith, Bethea, King, and McKeown 2000a; Gielen, McDonnell, and O'Campo 2002; Golding 1999; Lee, Pomeroy, and Bohman 2007; Stark and Flitcraft 1996). However, current research fails to identify whether IPA causes poor health, or whether victims of IPA have poorer health because they are more likely to come from groups with lower social support, fewer resources, or greater stress.

In this research analysis, I will first review existing literature of the health effects of IPA. Then I will show how examining IPA with an understanding that social factors can influence health can improve future research of IPA, and advance understanding of the mechanisms through which IPA can affect health. By identifying such mechanisms,

researchers will be able to understand better if the role of gender in health outcomes related to IPA.

Review of Literature of IPA and Health

Existing research of IPA and health indicates that IPA is associated with negative health outcomes for victims exposed to intimate partner violence. Physical IPA victimization is associated with poor health, depression, chronic disease, chronic mental illness, and injury for both men and women (Coker et al. 2002). Table 2.1 is a brief summary of research studies examining health effects of IPA. In this section, I will address each of these categories, discuss strengths, and identify weaknesses current research.

IPA Injury Outcomes

Victims of IPA often experience injuries in conjunction with physical or sexual violence. Injuries are the primary mechanism through which most research examines the link between IPA and poor health outcomes. Some research examines injuries of female victims compared to nonvictims of IPA. Other research compares male to female victims. In this section, I will first discuss injury rates for females in IPA compared to females in nonviolent relationships, and then discuss female injuries compared to male injuries from IPA victimization. Subsequently, I will examine research findings explaining how these may vary with violence duration or severity. Finally, I will conclude with future directions for research of IPA injury.

Female IPA victims experience more injuries than females not exposed to IPA. Research has shown that battered women experience average of one emergency room

Table 2. 1
Empirical Research of IPA and Health Outcomes

Author (Year)	Data type	Groups Studied	(N)	Type of health	Type of Violence	Outcomes
(Arias and Corso 2005)	National Violence Against Women Survey :cross-sectional, national survey	Men vs Women	7,934 men 7,920 women	Health Care Costs	Physical, injurious	Total average cost with at least 1 physical IPA : $948 women, $387 men
(Black and Breiding 2008)	BRFSS: cross-sectional; state-based survey	IPA men / women vs. control groups	42,566 women 27,590 men	Physical & mental	Physical & sexual	Reporting of health conditions and risk behaviors was significantly higher among women who had experienced IPA during their lifetimes compared with women who had never experienced IPA. Men who had experienced IPA during their lifetimes had a significantly higher prevalence of the following: use of disability equipment, arthritis, asthma, activity limitations, stroke, risk factors for HIV infection or STDs, smoking, and heavy or binge drinking.
(Coker et al. 2000a)	National Violence Against Women Survey :cross-sectional, national survey	IPA men / women vs. control groups	6790 women 7122 men	Physical & mental	physical, sexual, psychological, power & control	Both physical and psychological IPA are associated with significant physical and mental health consequences for both male and female victims.

Table 2.1 Continued

Author (Year)	Data type	Groups Studied	(N)	Type of health	Type of Violence	Outcomes
(Coker et al. 2002)	family practice clinics, cross-sectional	IPA vs control	1152 women	Physical	Psychological	Epidemiologically based. Women experiencing psychological IPA were significantly more likely to report poor physical and mental health.
(Ellsberg, Jansen, Heise, Watts, and Garcia-Moreno 2008)	WHO multi-country study; 10 countries.	IPA vs control	24,097 women	Physical & mental	Physical & mental	Significant associations between lifetime experiences of partner violence and self-reported poor health. Women who reported partner violence reported significantly more emotional distress, suicidal thoughts and suicidal attempts, than nonabused women.
(Kaura and Lohman 2007)	Cross-sectional	men compared to women	155 male and 417 female college students	Mental	Dating violence	Dating violence victimization is associated with relationship satisfaction and mental health problems for both men and women. Women more likely than men to have depression, anxiety, somatization.

Table 2.1 Continued

Author (Year)	Data type & Measure	Groups Studied	(N)	Type of health	Type of Violence	Outcomes
(Koopman, Ismailji, Palesh, Gore-Felton, Narayanan, Saltzman, Holmes, and McGarvey 2007)	Cross-sectional	women who had left violent IPA relationship	57 women	Mental	childhood sexual, adult psychological	Women's depression was significantly greater among those who had experienced childhood physical and sexual abuse, more severe psychological abuse, and greater bodily pain
(Loxton, Schofield, Hussain, and Mishra 2006)	cross-sectional Australian women	IPA vs control	14,100 women	Physical	Nonspecific IPA	Various physical conditions (allergies or breathing problems, pain or fatigue, bowel problems, vaginal discharge, eyesight and hearing problems, low iron, asthma, bronchitis or emphysema, cervical cancer) were associated with domestic violence.
(Martin, Mackie, Kupper, Buescher, and Moracco 2001)	Women who participated in Pregnancy Risk Assessment Monitoring System in No. Carolina; longitudinal	Pregnant IPA vs control	3542 women	Physical	Injurious	The prevalence of abuse before pregnancy was 6.9% compared with 6.1% during pregnancy and 3.2% during a mean postpartum period of 3.6 months. Most women abused after pregnancy (77%) were injured, but only 23% received medical treatment for injuries.
(Prospero 2008)	cross-sectional survey of University students; controlling behaviors scale and revised conflict tactics scale	609 violent couples	609 couples	Physical and mental	Physical and emotional	Results revealed that Mutually Violent Control (both violent and controlling) reported significantly higher levels of violent perpetration and worse physical and mental health than SCV (both violent, no one controlling)

Table 2.1 Continued

Author (Year)	Data type & Measure	Groups Studied	(N)	Type of health	Type of Violence	Outcomes
(Rand 1997)	Hospital emergency room data; population based. Emergency room data coded by injury for database	men and women in emergency rooms	1.4 million men and women	Physical	Injurious	A higher percentage of women in a study of emergency room victims than men were treated for injuries inflicted by an intimate ¾ a current or former spouse, boyfriend, or girlfriend. A spouse injured 5.9% of females compared to 1.8% of males. A partner (boyfriend or girlfriend) harmed 20.9% females, 2.7% males.
(Rivara, Anderson, Fishman, Bonomi, Reid, Carrell, and Thompson 2007a)	Longitudinal cohort study. Used questions from CDC BRFSS and from WEB scale.	IPA compared to control	3333 women	Physical, mental	Physical, sexual, psychological	Healthcare utilization was still 20% higher 5 years after women's abuse ceased compared to women without IPA. Adjusted annual total healthcare costs were 19% higher in women with a history of IPA (amounting to $439 annually) compared to women without IPA.
(Staggs and Riger 2005)	3-year longitudinal study of female welfare recipients in Illinois.	women IPA compared to control;	1000 women	Physical, mental	Nonspecific IPA	Chronic intimate partner abuse is associated with poor health, whereas recent intimate partner abuse is associated with unstable employment.
(Stark and Flitcraft 1996)	Emergency room sample. coded for injury.	IPA compared to control	520 women	Physical	Physical, injurious	Battering-risk group women had 3 times the injuries of nonbattered women.
(Tomasulo and McNamara 2007)	Community health care center survey. Health Care questioner, Health Habits inventory, 12-Item item Short Form Health Survey Version 2, Abuse Disability Questionnaire	IPA compared to control	148 women	Physical, mental	Nonspecific IPA	Results indicated that exposure to abuse was positively and significantly related to the adoption of a negative psychological perspective, which in turn was negatively correlated with physical and mental health

(ER) visit per year, compared to nonbattered women who experience one emergency room visit in lifetime.

Moreover, 14% of battered women had been to the ER more than 10 times with trauma (Johnson 2008). To put these injury rates into perspective, IPA caused as many injuries to women in one research population as auto accidents, which were then thought to be the most common source of injuries to adults (Stark and Flitcraft 1996). The high injury rates of females exposed to IPA compared to females not exposed to IPA demonstrates the importance of addressing IPA as a health concern rather than only a "domestic problem."

In addition to female victims experiencing more injuries than a female control group, female IPA victims also experience more injuries than male IPA victims do. Research indicates that only 20.7% men who report victimization report at least one injury, while 39.2% women report at least one injury (significant $p<.0001$) (Arias et al. 1999). Another study of emergency room patients identified that a spouse injured 15.9% of females and 1.8% males. Additionally, boyfriends or girlfriends harmed 20.9% of females and 2.7% males (Loxton et al. 2006). This shows that a current intimate partner injured over 35% of female emergency room victims. Conversely, a current partner injured fewer than 5% of male victims. Because of high rates of abuse towards women from ex-partners, we can assume that these numbers would be even higher for women if they included ex-partners.

These injury findings underline the importance of recognizing IPA as primarily of problem of men injuring women. Some researchers have argued that IPA is "gender symmetric" or that men and women are equally violent in relationships (Dutton 2006;

Prospero 2008; Straus et al. 1986), but research of IPA injuries illustrates that women are the primary victims of IPA injuries.

Not all female victims have the same risk of injury; injuries vary on severity of violence. For women experiencing a more mild form of IPA referred to as "situational couple violence" ("SCV"), one in four women experience injuries (Johnson 2008). In couples experiencing more severe types of violence, 3/4 of women experience injuries from violent episodes (Black and Breiding 2008; Campbell 2002; Pallitto, Campbell, and O'Campo 2005; Sarkar 2008) . Victims may not have the means to seek treatment and may leave severe abuse untreated. This can lead to long-term health problems. For example, severely abused women often report untreated loss of consciousness due to abuse. This can lead to neurological damage, hearing damage, sight damage, and concentration problems (Campbell and Lewandowski 1997).

One can *assume* that exposure to IPA for a longer duration would lead to greater injurious effects over time, but researchers should use longitudinal research to test this assumption. Additionally, while some studies indicate that women who are trying to escape IPA may need to use more severe violence than their partners to "level the playing field," (Melton and Belknap 2003: p. 344). Research has failed to examine injurious outcomes for male perpetrators adequately.

Because most research focuses on victims of severe IPA, this research contributes to the literature by examining the health risk for victims of less severe IPA; although research does indicate that violence rates and injury are higher in IT than SCV, the injury risk for victims of SCV is largely unknown. Research to this point has not compared injury rates of SCV to injury rates in the general population. With one in four victims of

SCV reporting serious injuries (Johnson 2008), I argue that future research should measure these effects of their own accord, not simply in relation to IT.

Injury counts in IPA are most likely an undercount. It is impossible to know exact numbers of *injured* victims because a substantial portion of victims may not seek medical care, or may refuse to participate in research. Violent relationships are socially undesirable, so individuals that do participate in research may fabricate injury scenarios or underestimate violence because of the social connotations of labeling victims or perpetrators of violence. Additionally, if researchers only assess current relationships, then IPA injury may be undercounted. This research can assess whether a current or former intimate partner inflicted reported injuries.

Physical Health Correlations

IPA is associated with an array of negative physical health effects for male and female victims. Generally, IPA is a strong and significant predictor of poor physical health (Johnson 2008). Research identifies poor physical health outcomes, gynecological and pregnancy-related health outcomes, and homicide risk as physical health results of IPA. I will discuss each of these, along with directions for future research of physical health and IPA in this section.

Not all physical ailments resulting from IPA are a direct result of injury incurred through a violent incident. Research indicates that female victims of IPA reported more allergies, breathing problems, pain or fatigue, bowel problems, vaginal discharge, eyesight and hearing problems, asthma, low iron, bronchitis, cervical cancer, difficulty walking, difficulty with daily activities, pain, memory loss, and dizziness, than nonvictims (Coker et al. 2002; Ellsberg et al. 2008). Although some of these physical

ailments can be traced to physical or sexual abuse, others may be related to the decreased resistance to disease present in groups who are lower on the social ladder (Berkman and Syme 1979). In addition to these physical ailments, research indicates that women exposed to IPA had over three times the odds for HIV and other STI risk factors (Black and Breiding 2008) compared to women who did not report IPA exposure. This increased risk of HIV exposure and other STI's is due to decreased condom use and increased injury from forced sex by abusive partners. Males who use rape as a form of IPA are less likely to use condoms than are males who have consensual sex (Gielen et al. 2002). Negotiating condom use is more difficult for women who are physically or psychologically abused by a partner than for women in non-abusive relationships (Cole, Logan, and Shannon 2007).

Very few studies examined the effects of IPA victimization on men. One study indicated that men who experienced IPA at some point in their lives had higher prevalence of "use of disability equipment, arthritis, asthma, activity limitations, stroke, risk factors for HIV infection or STDs, smoking, and heavy or binge drinking" (Black and Breiding 2008: p. 649). These risky behaviors found in male victims are similar to risk taking behaviors experienced by female victims (Cole et al. 2007; Martin, Beaumont, and Kupper 2003).

Although both men and women may experience negative health effects because of IPA, women are uniquely disadvantaged in that they experience pregnancy and gynecological effects from physical and sexual abuse. Gynecological problems are the most consistent, longest lasting, and largest physical health difference between females who are IPA victims and those who are not. In addition to the physical injuries caused

from forced sex, women who are abused by intimate partners are at increased risk of sexually transmitted infections, bladder infections, and of having partners who refuse to use a condom or contraception (Campbell 2002). Researchers estimate that 40-45% of batterers rape their partners (Campbell and Lewandowski 1997).

Abuse during pregnancy is a significant cause risk of danger to mother and infant. It has been identified as a significant cause of maternal mortality (Campbell, Garcia-Moreno, and Sharps 2004). In addition to personal physical health problems for pregnant abused women, the abuse can cause permanent injury or death to the unborn child (Arias and Corso 2005). IPA during pregnancy significantly increases the risk of low birth-weight babies, preterm delivery, and neonatal mortality (Sarkar 2008).

Women experience the highest risk of the most severe physical health outcome in IPA: men are more likely to kill female partners than the reverse (BJS 2007a; Kilmartin and Allison 2007; Melton 1999; Miller 2005). Some argue that the number of wives killed by husbands has declined in recent years. While this is true (the number of wives killed by husbands has declined since 1970s), the number of marriages has also declined. Moreover, the number of men killed by intimate partners has lessened to a much greater degree than the number of women (BJS 2007a). In 1976, intimate partners killed about equal rates of women and men. Now a woman's risk of being killed by an intimate partner is about three times that of a man's risk (Stark 2007).

Research has identified IPA as a predictor of poor health outcomes. Yet, current research has failed to make a connection between social factors (lack of resources, high stress, low social support), and poor health. Research to this point has primarily examined negative health effects of injuries incurred through physical or sexual abuse, or emotional

health effects of abuse. In addition to negative health outcomes that result from the abuse, negative health outcomes may result from decreased access to resources, increased stress, and lower levels of social support that often accompany intimate partner abuse. Research has neglected to use social epidemiology findings to explain the relationship between these negative social factors that are associated with IPA and poor health outcomes. Additionally, previous research has failed to examine if there are health differences for couples where both report using violence, where violence is low level, or to examine whether these differences are dependent on the gender of the victim or perpetrator. This research will address gaps to enhance understanding of the relationship between IPA and negative physical health outcomes. Examining stress, resources, and social support, is conducive to a better understanding of the relationship between negative health outcomes and social factors in abusive relationships.

Emotional Health Correlates of IPA

In addition to poor physical health outcomes, IPA is associated with poor emotional health outcomes. Only limited research has examined gendered effects of IPA on emotional health. These findings indicate that female victims experience more emotional health effects (Campbell and Lewandowski 1997), and use more mental health related services (Bensley, Van Eenwyk, and Wynkoop Simmons 2003) than do male victims. Research attributes these gendered differences to a greater likelihood that females will be at continued risk of violence (Campbell and Lewandowski 1997).

Findings indicate that women exposed to IPA report lower quality of life, and higher levels of anxiety and depression than nonabused women (Kilmartin and Allison 2007). This is an indication that abuse has a harmful effect on emotional health and

wellbeing. Physical, psychological, and sexual abuse could all lead to poor emotional health outcomes (Coker et al. 2002; Ellsberg et al. 2008). In this section, I will discuss rates of emotional distress, depression and PTSD, among victims of IPA. Additionally, I will discuss gender differences in emotional health outcomes, and future directions for research of emotional health outcomes and IPA.

Females who have experienced IPA in their lifetime report significantly higher levels of emotional distress and fear than do men (Campbell and Lewandowski 1997) or nonabused women (Lipsky and Caetano 2007). Emotional distress and severe emotional health outcomes (including suicide thoughts or attempts) are related. Females who have experienced IPA in their lifetime report significantly more suicide attempts, and suicidal thoughts than nonabused women (Lipsky and Caetano 2007).

Depression and PTDS are the most common emotional health side effects of IPA (Campbell 2002). Female victim of IPA are three times more likely to report being depressed than nonvictims of IPA (McCloskey, Williams, Lichter, Gerber, Ganz, and Sege 2007). One study indicated that the mean prevalence of depression among female victims of IPA was 47.6%; this is much higher than rates ranging from about 10% to about 21% in the general population (Golding 1999). Additionally, 4/5 IT victims and 37% SCV victims report experiencing posttraumatic stress disorder (PTSD)(Lipsky and Caetano 2007) , and female victims were twice as likely as male victims to develop PTSD (Rivara, Anderson, Fishman, Bonomi, Reid, Carrell, and Thompson 2007b).

One difficulty in examining depression in abusive relationships is that the relationship between depression and abuse depends on gender. Women often suffer depression because of abuse victimization (Campbell 2002; Golding 1999). Furthermore,

women may suffer from depression not only by victimization, but also by exposure to physical aggression – even if they have participated in the aggression(Vaeth, Ramisetty-Mikler, and Caetano 2010). On the other hand, rather than being a result of aggression, depression may be a cause of aggression in men. Men who suffer depression are often aggressive towards others (Dietmar, Edda, and Siegfried 2005), and aggression is one of the best predicting symptoms for major depressive disorder in men (Palsson, Sigurasson, Aevarsson, and Olafsdottir 2009). This means that while depression may be a sign of victimization for females, it may be a precursor to perpetration for males. Gender differences are included in assessments of depression within this study.

Overall, research of IPA and emotional health indicates that psychological abuse can have a harmful effect on physical and emotional health (Ellsberg et al. 2008). Current laws do not see psychological or emotional abuse as "criminal," so victims of this abuse may not be eligible for services. If findings demonstrate that psychological abuse and psychological effects of physical or sexual abuse harm victims, it will be an indication that the legal system should consider counting nonphysical forms of violence as "abuse". It would demonstrate the need of providing IPA services to all victims because injuries are not always physical. Additionally, it would be an indication that shelter programs and victims services should provide victims with resources and allocate funding for mental health or emotional health services. Future research should further address gendered mental and physical health effects of IPA, and the effects of differing violence severity on emotional health outcomes.

Identifying Mechanisms Through Which IPA Leads to Poor Health Outcomes

Most research of the physical and mental health effects of IPA is cross-sectional and can only show that there is a correlation between poor health and IPA (Black and Breiding 2008; Coker et al. 2002). There are only a few studies that use longitudinal data, and those studies do not differentiate between types of violence (Staggs and Riger 2005), limit their study to pregnant women (Martin et al. 2001), or examine health care costs rather than health effects (Rivara et al. 2007a). Research lacks longitudinal samples, and needs to address health effects in conjunction with social and individual factors that may lead to poor health outcomes. Additionally, research of health outcomes needs a thorough assessment of gender. Research of health outcomes of IPA has focused on women alone, men alone, or victims alone; this makes it impossible to identify gendered health effects and to determine if gendered health effects depend on if one or both parties use violence.

Cross-sectional analysis of health and IPA does not allow researchers to determine if IPA precedes (and causes) poor health, or if they are simply correlated. Although it is not possible to rule out every spurious relationship, longitudinal research allows assessment of different time points to identify whether health outcomes change or stay the same over time, and to identify whether these potential changes happen in conjunction with changes in IPA status.

Researchers do not agree on the relationship between IPA and poor health. Some research indicates that poor health outcomes are simply the result of injuries from physical or sexual abuse (Martin et al. 2001):

IPA → injuries → poor health outcomes.

Other research indicates that IPA can cause stress, low social support, and lack of resources, all of which lead to poor health outcomes (Pico-Alfonso, Garcia-Linares, Celda-Navarro, Herbert, and Martinez 2004):

IPA →Stress, low social support, lack of resources → Poor Health Outcomes.

Still other research indicates that stress, low social support, and lack of resources lead to IPA, which then leads to poor health outcomes (Felson 1992):

Stress, low social support, lack of resources → IPA →

Poor Health Outcomes.

Regardless of whether stress, low social support, and lack of resources come are present before IPA, research indicates that victims of IPA experience increased stress, decreased social support, and decreased ability to use resources for their benefit when compared to nonvictims (Allen and Straus 1980; Bargai, Ben-Shakhar, and Shalev 2007; Greer Litton, Benson, DeMaris, and Wyk 2002).

Research findings indicate that IPA can lead to poor physical health outcomes through injuries incurred through physical or sexual violence, perpetrator limiting health care access, and through emotional health channels. While these reasons are likely explanations for the link between some IPA and poor physical health outcomes, they do not provide a complete explanation. Combining an understanding of the relationship between social factors and health outcomes with an understanding that the nature of violent relationships leads to an increase of negative social factors (higher stress, lower social support, and lack of resources) exposes another plausible pathway through which IPA may lead to poor health outcomes. Although current research shows that health outcomes and IPA are connected, it only ambiguously explains how low-level violence or

noninjurious IPA could lead to poor health outcomes. Moreover, whether or not low violence and noninjurious IPA lead to poor health outcomes is largely an unknown.

Previous research by social epidemiologists indicates that social factors (stress, social support, and resources) can cause poor health outcomes for risk groups, specifically women and children. More specifically, substantial evidence in research by social epidemiologists indicates that social factors, not just individual behaviors, influence health outcomes of risk groups (Berkman and Syme 1979; Cassel, 1976).

Parallel research in IPA identifies that certain social factors inherent in many IPA relationships (including stress, lack of social support, and low resource allocation) lead to poor health outcomes. Additionally, certain risk groups (including women, minorities, and poor) disproportionately experience these negative social factors (Berkman and Glass 2000; Marmot and Wilkinson 1999). Women are the primary risk group of poor health outcomes in IPA. It is important to clarify that women who risk poor health outcomes because of IPA are at risk because of social factors (IPA, increased stress, lack of social support, lack of resources), not only because of individual factors (violence severity, injury) . Previous research indicates that women, minorities, and poor are at increased risk of the negative health effects of IPA (Brownridge 2009; Evans 2005).

Research exploring the link between social factors and poor health demonstrated in research by social epidemiologists is rare. Limited research indicates that the same social factors that social epidemiologists have found to cause poor health outcomes in other populations can lead to poor health outcomes among victims of IPA. Specifically, victims of IPA often have lower access to resources, lower social support, and higher levels of stress than nonvictims do (Allen and Straus 1980; Bargai et al. 2007; Greer

Litton et al. 2002) They also suffer negative health effects from abuse (Coker et al. 2000a; Coker, Smith, McKeown, and King 2000b)

Coker and colleagues' cross-sectional analysis identified the importance of using epidemiological research to examine the physical health consequences of verbal and psychological IPA. Their results indicated that women experiencing psychological IPA reported poorer physical and emotional health than women who did not experience IPA (Coker et al. 2000a). This research is unique because it demonstrates that not only does physical abuse lead to poor physical health outcomes, but verbal and psychological abuse can also lead to poor physical health outcomes. This research will expand these findings by assessing whether abuse can lead to negative health outcomes for couples with non-injurious violence, less severe violence, or in couples where both are violent. Additionally, this research improves upon Coker and colleagues' research because is longitudinal, and examines results for both males and females.

Social Mechanisms Through Which IPA Causes Poor Health

Research in social epidemiology explains that populations who experience excessive stress, lack resources, or have low social status have higher risk of disease and illness than populations with fewer stresses or greater access to resources. In other words, health is determined by social factors (Marmot and Wilkinson 1999). Social epidemiologists have also discovered that certain risk groups are more likely to experience these negative social factors. Specifically, the poor, and minority groups are disproportionally at risk of experiencing poor health outcomes due to stress, lower social status, and lack of access to resources (Berkman and Syme 1979; Cassel, 1976; Syme and Yen 2000). Research of IPA parallels this research in social epidemiology in that

increased stress, reduce access to social support, and limited access to resources are *results* of IPA victimization. Additionally, certain risk groups (women, minorities, and poor) are disproportionally IPA victims (Brownridge 2009; Houry et al. 2008; Kalmuss and Straus 1982; Stark 2007) (See Figure 2.1). Through identification of outcomes and

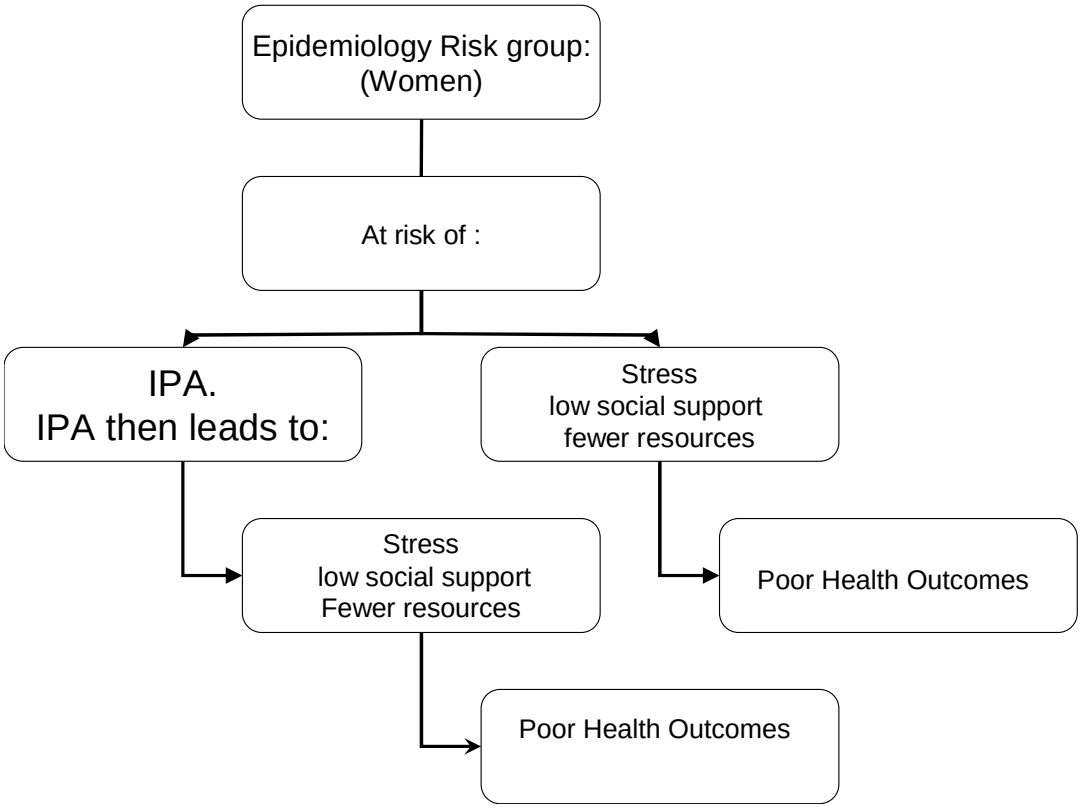

Figure 2. 1 Risk groups and health outcomes

risk groups, theoretical conceptions no longer identify IPA as an individual factor, but as a social factor that influences health outcomes risk groups

Through researching social mechanisms that produce poor health outcomes for IPA victims, we can determine: 1) If there are negative health outcomes from low-level or non-injurious violence, and 2) if these effects vary by gender. This can indicate whether violence has similar health effects on men and women. It can tell us if men and women each experience equal increase of stress, decrease of resources and decrease of social support in IPA. Additionally, it can tell us if men and women both experience negative health effects from being an IPA victim. If resources, stress, and social support resulting from abusive relationship were different for men and women, it would be another indication of gender asymmetries in SCV. This is a richer analysis of "gender symmetry" than previous surface level comparisons of rates and incidents of violent acts.

In this section, I will demonstrate how previous research exhibits a causal relationship between being members of a risk group (female) and having poor health outcomes. I will explain how stress, lack of social support, and lack of resources influence health outcomes for risk groups (women, minorities and poor) who are victims of IPA. Subsequently, I will explain how the effects of being from a risk group and an IPA victim may compound poor health outcomes. Finally, I will propose a research plan to incorporate epidemiology into the study of gender, IPA, and health.

Stress Leads to Poor Health Outcomes

Stress in the family and home are important determinates of health (Williams and Collins 1995). Prolonged exposure to stress can be harmful because stress evokes physiological responses, including increased cortisol production, from the body which

weaken the body and create higher disease susceptibility (Berkman and Syme 1979; Marmot and Wilkinson 1999).

Women experience higher stress levels than men. Being female is a risk factor for stress. Research has shown that women experience more stress than men (Kimmel 2008). Overall, women report higher levels of stress, and women report having fewer "stress free" days than men do. Moreover, women were more likely to continually be distressed from one day to the next (Almeida and Kessler 1998). This prolonged exposure to stress places women at a health disadvantage compared to men; women experience emotional health effect of stress (including depression) at higher rates than men (Romito and Grassi 2007).

IPA increases stress. Research indicates that victims of IPA have higher cortisol levels (which is a physiological indication of stress) than nonvictims IPA (Pico-Alfonso et al. 2004). IPA causes stress for victims who are constantly trying to avoid violent attacks from perpetrators, or who are constantly monitoring their own actions to assure compliance with perpetrator demands (Stark 2007). Perpetrators often use violence for prolonged periods, and victims can do little to reduce the stress. A 3-year study of over 1000 female welfare recipients, demonstrated that the chronic stress of IPA was associated with poor health (Staggs and Riger 2005); the study participants who were victims of chronic IPA experienced higher stress and poorer health outcomes than those who were poor without chronic IPA. Future research should further examine the effects of stress on health in violent relationships.

Social Support Leads to Positive Health Outcomes

Another social factor that influences health outcomes is social support. Positive social support can offset and minimize the negative health effects of stress. Having access to positive social support is seen as a mental and physical health benefit while lacking access to social support has negative health outcomes (Cassel 1976), and has been associated with higher mortality at all socioeconomic levels (Berkman and Syme 1979).

Relationships themselves carry a certain expectation of social support. For example, research has shown that healthy marriages afford their members (particularly male members) a certain "health premium" wherein they enjoy better health than unmarried counterparts (Waite 1995); women are often a positive influence on the health of husbands because women promote healthier behaviors and limit risk-taking behaviors of their spouses (Umberson 1992; Waite and Gallagher 2000).

Females have access to less social support than males. Unfortunately, females do not experience the same "health premium" as men. Women are more likely to provide social support, and less likely to reap health benefits from social support in marriage (Kawachi and Kennedy 1997). Additionally, structurally allocated gender roles may encourage women to be "homemakers" which limits their access to social support of coworkers. Overall, women's access to social support through intimate relationships does not necessarily have a positive impact on health. Minorities and poor also have limited access to social support compared to nonminorities and wealthy (Wilkinson 1999).

IPA further decreases access to positive social support. Victims of IPA may experience lower access to positive social support because of the relationship between social attachments and health; negative social support is worse for health than no social attachments (Ross 1995). Abuse, violence, and trauma have some of the most powerfully negative effects on health of any social relationships (Berkman and Glass 2000).

At an individual level, abusers use tactics of isolation (Houry et al. 2008) to prevent victims from obtaining positive social support. Abusers often prevent victims from maintaining contact with family or friends. This use of isolation tactics can have negative effects on health of victims.

Risk of poor social support for victims of IPA is clear, but it is possible that perpetrators of IPA will also experience risk of lower social support than do non-victims because of changes in access to the "health premium" that married men enjoy. Married men experience a greater health benefit from marriage than do married women (Waite, Bachrach, Hinden, Thomson, and Thornton 2000). Research does not indicate whether men in abusive relationships experience the same marriage health premium as men in healthy relationships. However, one can assume that even if men lack the positive social support often given in marriage, this is probably less harmful than the negative health effects inflicted primarily upon women in violent relationships. Future research should address the specific effects of social support and isolation on health in violent relationships.

Resources Lead to Positive Health Outcomes

Another social factor that influences health outcomes is access to resources. Having access to resources has a positive effect on health. People who are poor, (or have

fewer resources) are less well off; they have shorter life spans than those who have more money and resources. There is a “social gradient” wherein people higher in social status and resources typically live longer, and are less susceptible to diseases (Marmot and Wilkinson 2003). Consequences of poverty may include: poor health (Syme and Yen 2000), inaccessibility to medical care, inadequate nutrition, unsafe housing, and low levels of education (Staggs and Riger 2005). Research has demonstrated that greater access to resources means better health (Marmot and Wilkinson 2003).

Unfortunately, society does not allocate resources equally by gender. Women have access to fewer resources than men do. One of the areas where women are resource deficient is economic resources. In society, women are likely to be poorer than men (Syme and Yen 2000) due to of socialized breadwinner- homemaker roles, wage gaps, and socialized pairings that give men an advantage (O'Brien 1971). This translates into men enjoying added resources and having greater access to social capital, services, and amenities (Pence and Paymar 1993; Stark 2007).

Minorities and poor have limited access to resources. In addition to limited resources imposed by poverty, poor and minorities experience limited access to law enforcement support and to access to services. Stereotypes against black women have led to higher rates of arrest of black women who are victims of IPA than of victims from other groups (Sokoloff 2005). This has been found to reduce the chance of calling the police for assistance if future IPA occurs migrant victims may have limited access to resources if they do not speak English, or if police and court authorities believe that violence is “cultural” for the migrant group (Sokoloff 2005).

IPA reduces access to resources. Victim of IPA are at risk of having fewer resources than nonvictims have. In violent relationships it is a common coercive tactic for the perpetrator to use financial abuse to deny victims access to money, basic necessities, bank account information, or even her own paycheck. An abuser may not allow a victim to gain education or work experience (Pence and Paymar 1993; Stark 2007). This means that even if a female victim is not "in poverty," per say; she may have limited access to health care, money, or other resources because the male controls all access to family resources. Women who are homemakers, or who are high in marital economic dependency, have few viable alternatives to marriage; this may force them to be more tolerant of mistreatment and abuse from husbands. Mothers and women who are financially abused cannot easily leave abusive marriages and often possess too few resources to negotiate changes in the behavior of their husbands (Stark 2007).

Additionally caretaking responsibilities and the wage gap put women at a financial disadvantage if they try to leave abusive relationships. Women are less likely to have the resources they may need to live in safer neighborhoods, or to have access to health care if they do leave (Stark and Flitcraft 1996). Women in poverty and women who rely on welfare may be especially vulnerable to being economically unable to leave abusive men (Arias and Corso 2005; Scott et al. 2002). Economic dependency, not psychological dependency, prevents women from leaving abusive relationships (Rand 1997).

Research that explores gender and IPA within an epidemiological framework indicates that for each of the listed social factors (stress, social support, and access to resources); both members of risk groups (women, minorities, poor) *and* IPA victims are

at increased risk of poor health. However, the females, minorities, and poor are mutually not exclusive from "IPA victim;" many IPA victims are members of other risk groups. For individuals who fall in more than one risk group, it is unknown if risk is increased. For example, increased stress, decreased social support, and decreased resources that result from IPA (see Figure 2.1) can compound the health effect of being female. By examining these variables, future research can identify if poor health is a result of gender, IPA victimization, or both. Additionally, future research can identify if stress, social support, and resources are the mechanisms through which IPA leads to poor health outcomes. By so doing, the connection between poor health and IPA will be less ambiguous. This research will examine whether there are gendered effects of IPA on health.

Health-Risk Behaviors of IPA Victims

Epidemiology is a way of understanding trends in health outcomes and health behaviors of populations. Male and female victims of IPA are a population at increased risk of unhealthy behaviors including risk of HIV exposure, risk of smoking, and risk of heavy drinking (CDC 2008). Research also indicates that both pregnant and nonpregnant victims of IPA experience higher incidence of substance abuse than nonvictims do (Martin et al. 2003; Silverman, Raj, Mucci, and Hathaway 2001). These risky behaviors are not simply a result if individual factors, but an effect of IPA.

Both victims and perpetrators of IPA are at risk of unhealthy behaviors. Abusive men often use alcohol or drugs as an excuse to be violent; they will get drunk or "high" if they want to have an excuse to beat up their partner (Bancroft 2002). It is estimated that IPA and substance abuse co-occur in about half of men in substance abuse or IPA

treatment programs (Thomas and Bennett 2009). In assessing IPA, and the social factors that support it, I will assess risk-taking behaviors that may be present within risk groups.

Challenges of Research with Self-Reported Health Measures

Reporting of Health

The NSFH relies on self-reported measures of health. Previous research indicates that self-reported measures of health differ by race, ethnicity (Fletcher 2009), gender, psychological factors, and socioeconomic status (Demakakos, Nazroo, Breeze, and Marmot 2008; Duetz, Abel, and Niemann 2003; Matthews, Manor, and Power 1999; Read and Gorman 2006). In general, minority groups often report poorer health than whites (this is especially true for Blacks (Read and Gorman 2006)), and persons of lower SES report worse health than those with higher SES. This is partially because poor people have fewer resources to prevent or cure disease (Demakakos et al. 2008).

Research suggests that women and men have significant differences in reported health measures. Gender is significantly associated with differences in self-reported physical fitness and medical conditions (Duetz et al. 2003). The magnitude of gender differences in reported heath is somewhat unclear. Although gender differences are often significant, this does not mean that the differences are large. An example of this is a research study where an author's measure self-reported health on a five-point scale, with 1 being poor and 5 being excellent. The differences in health reporting by gender were statistically significant for every age group under 75 years. Nonetheless, the difference in self-reported health between genders was not larger than .11 in any of the groups (in the group with the largest difference, age 18 to 29, the mean score for women was 4.12 and mean score for men was 4.23; the overall group score was 3.78 for women and 3.89 for

men). Although these differences are significant, they are not large (Gorman and Read 2006). Other research indicates that gender differences in self-reported health were not consistent across age and health measures (Matthews et al. 1999).

When observing self-reported health measures in this study, I will stratify the sample by gender to allow comparison of health differences between men in violent and nonviolent relationships, and to allow comparison of health differences between women in violent and nonviolent relationships. This will allow for analysis of each group to determine if males and females experience symmetrical or asymmetrical health outcomes because of exposure to partner violence.

Research Questions

The current research debate of whether or not IPA is "gender symmetrical" coupled with the recent framing of IPA as public health concern provides a new avenue through which researchers can explore gender symmetry in couples experiencing situational couple violence.

Previous research indicates that negative health outcomes and injuries are significantly more likely among victims of IPA, but research has not yet addressed the mechanisms through which IPA may lead to poor health outcomes. Foremost, research has largely failed to identify if negative health effects persist with low level IPA or of non-injurious IPA, or to identify if health outcomes from IPA are "gender symmetrical." This research gap exists because family violence theorists use methods that do not contextualize violence as part of a gendered social system, and feminist researchers primarily examine couples experiencing severe violence. Since most previous research by feminist authors focuses on health outcomes among severely violent couples, they neglect

identify if there are gender differences in health outcomes for SCV, and fail to address the mechanisms through which IPA may lead to poor health.

As was stated at the end of Chapter 1, the purpose of this research is twofold. The first is to determine if situational couple violence is gender symmetrical. I do this through an analysis of SCV and SCV health outcomes. The second purpose is to further the debate of gender symmetry by applying feminists definitions, contextualization, conceptualizations, and research methods to data typical of family violence researchers. I hypothesize that feminist conceptualizations will reveal gender asymmetry in research of situational couple violence even when using typical family violence data.

This research will use feminist conceptualizations of gender, perpetration, and victimization to address the research hypotheses, and to explore the issue of "gender symmetry" within the context of a gendered social system. Within these hypotheses, "feminist conceptualizations" are inclusive of more complex analyses of "gender symmetry" than is found in typical family violence research. Rather than exploring incidence or prevalence of violence, this research explores health outcomes resulting from IPA, and asymmetries in social factors that lead to health outcomes in the context of a gendered social structure. Although one can expect that data limitations may lead to similar rates of violence reporting by men and women in the data, the real question is whether there are asymmetries in the outcomes of IPA exposure when contextualizing "gender symmetrical" outcomes. Table 2.2 includes the four research questions that address my hypothesis.

Table 2. 2
Research Questions

Research Questions for Dissertation		
1.	Is SCV "gender symmetrical" in violence victimization and use of violence?	
	A.	Does violence reporting vary by gender for SCV couples?
	B.	Does violence use vary by gender for SCV couples?
	C.	Does violence victimization vary by gender for SCV couples?
2..	Is SCV "gender symmetrical" in injury?	
3.	Is SCV "gender symmetrical" in health outcomes?	
	A.	Are there physical or mental health effects of IPA among SCV couples?
	B.	Do physical health outcomes vary by gender for SCV couples?
	C.	Do mental health outcomes vary by gender for SCV couples?
4.	Is SCV "gender symmetrical" in social factor outcomes that effect health?	
	A.	Does stress vary by gender for SCV couples?
	B.	Do resources vary by gender for SCV couples?
	C.	Does social contact vary by gender for SCV couples?

Ultimately, by addressing these research questions, this dissertation will examine whether applying feminist conceptualizations of "gender symmetry" to SCV samples will identify gender asymmetry, as I hypothesize. This research will examine whether or not IPA leads to poor health outcomes in couples experiencing SCV, and it will identify reveal whether or not outcomes vary based on gender. This addresses the larger question of whether family violence methods and instrumental data flaws have led to a false perception of gender symmetry in previous research of SCV.

Examining data that are typical of family violence research with feminist conceptualizations may lead to a resolution of the current stalemate in the debate of gender symmetry. If results of this study indicate a semblance of "gender symmetry," then feminist researchers can conclude that more research of SCV in the context of a gendered social system is necessary. Unfortunately, this research will require development of new research instruments and surveys that better address a range of violent and abusive behaviors, and that contextualize those behaviors by gender and by motivation for violence usage (for example, self-defense motives). Furthermore, feminist researchers can conclude that data used by family violence researchers (which often lacks adequate assessment of sexual violence, violence context, violence by motivation, frequency of violence, violence by previous partners, violence severity, and nonviolent forms of abuse) is inadequate to determine if there is gender asymmetry in SCV. While these conclusions would probably be disputed by family violence theorists and misconstrued in an attempt to show "symmetry," such findings could provide research direction for feminist researchers.

Future research efforts by feminists could focus on developing a large, national sample that includes a more complete assessment of abuse. Such an assessment would include analysis of sexual violence, motives and context of violence, severity of violence, frequency of violence, and nonviolent abusive tactics. Once such data are developed, researchers could assess the role of gender in SCV with inclusion of an assessment of motives, meanings, and outcomes of SCV.

On the other hand, if results of this study indicate "gender asymmetry" then feminist researchers can conclude that even with severe data limitations, a thorough examination of data show gender differences in SCV. This would indicate a need for further examination of low-level violence or couples where both report using violence to better understand gender differences in this type of violence. It also indicates a need to reexamine previous family violence findings using a broader definition of "gender symmetry" in order to identify possible oversights of gender asymmetry due to theoretical conceptualizations and research methods used in past research. Findings of gender asymmetry would indicate a need for family violence theorists to reassess the common held belief that men and women are equal perpetrators or victims in SCV. It would call for family violence theorists to revisit their current definition of "symmetry."

In conclusion, whether or not there are gender differences in SCV is presently unclear. Whether or not there are gendered health outcomes of SCV is presently unknown. This research will examine the role of gender in SCV by including a broader definition of "gender symmetry," and by examining gender and health outcomes. Results will provide direction for future research of situation couple violence.

CHAPTER 3

RESEARCH METHODS

Data

This study examines the hypothesis and research questions outlined in Chapter 2 using feminist conceptualizations of "gender symmetry." As was outlined previously in this dissertation, feminist conceptualizations of symmetry include contextualization of violence in a gendered social system, analysis of outcomes resulting from IPA exposure, and recognition that without identification of motivations or self-defense, use of violence does not automatically make someone a "perpetrator." In this research, I examine violence use, injuries, health outcomes, social factors related to health outcomes to determine if there are gender symmetries among couples experiencing situational couple violence.

The data in this research are from the National Survey of Family and Households (NSFH). The NSFH is data from a large, national sample representative of the general population. It includes variables to measure IPA, gender, and health outcomes. It allows for comparison of IPA victims to a control group not reporting IPA exposure. In this section, I will discuss the methodologies, strengths, and limitations to the NSFH.

The NSFH is an unbalanced longitudinal panel-type data with three waves. The first wave was completed from 1987-88 and included 13,007 individuals in 9,637

households. There was an oversampling of several minority groups, single parent families, blended families, cohabiting couples, and recently married couples. In each household, the NSFH chose a primary respondent at random, and asked the respondent to complete a survey including both self-administered modules and an interview. Spouses or cohabiting partners were also asked to complete a shorter self-administered survey (Sweet and Bumpass 2002).

The second wave followed 5 years later. From 1992-94, the NSFH conducted follow up interviews of respondents in the first wave. Personal interviews for the second wave included 10,007 interviews with original respondents, 5624 interviews with current spouses or cohabiting partners, and 789 interviews with ex-spouses or ex-partners,

The NSFH gathered data for the third wave from 2001 -2003. Unfortunately, the project lost funding and the third wave was unable to follow a large portion of respondents (Bumpass and Sweet 2003). I will use data from the third wave where possible, and will only restrict my analyses to the first two waves where necessary due to data limitations.

Johnson (2008) writes that, “General social surveys uncover mostly situational couple violence” (p. 3). There are several reasons for this. The primary reason is that low-level violence, or “situational couple violence” is more prevalent in the general population than more severe violence. It is thought to be “The most common type of partner violence” (Johnson 2002; p. 11). This means that even if both severe and low-level violence couples participate in a large national survey, the majority of couples experiencing violence in relationships are likely to experience low level violence. Furthermore, it is the nature of large national phone survey data to excludes couples

with extreme violence, particularly in later waves (Brush 1990; Salari and Baldwin 2002)). Because the NSFH is a general social survey, because SCV is thought to be the most common type of IPA, and because the NSFH is a large national phone survey, NSFH data are thought to primarily identifies less -severe IPA, or what Johnson identifies as “situational couple violence" (SCV) (Johnson 2008).

Researchers characterize situational couple violence, and large sample data, by low rates of injuries, and low rates of violence in the overall population. Although previous research and theory suggest that large telephone samples lead to an undersampling of severe violence, it is likely that some couples experiencing severe violence are still included in these data. However, over time, these couples may be lost from the sample because of isolation, refusal to participate, or because of relationship disintegration (Salari & Baldwin, 2002). While some couples experiencing severe violence are likely present in the sample, it is generally representative of couples experiencing low-level violence.

This analysis of primarily low-level violence in NSDH data allows examination of a representative sample of IPA, and comparison of that sample to a nonviolent control group. Similar analysis is not possible with data from shelters, hospital samples or other victim service agencies that would not have a control group to compare with the group experiencing violence.

The NSHF includes data on individuals who are married, divorced, remarried, widowed, cohabiting, and never married. I restricted the study sample to individuals who were in an intimate relationship (either married or cohabiting) at sometime within the three waves. Additionally, I exclude widows and widowers from the sample because of

the unique health effects of losing a spouse to death. The NSFH interviewed almost 81% of the sample (80.69%) in both Wave 1 and Wave 2 of the data. The third wave was limited to couples with a "focal child" from Wave 1 or respondents over the age of 45 at Wave 3. Only 7,277 households were included in the third wave of the data.

The NSFH is inadequate in assessing several key indicators of IPA. The NSFH does not include a measure for sexual violence. This is unfortunate because females are more likely to be victims of sexual violence (Coker et al. 2002; Tjaden and Thoennes 2000a). The NSFH only assesses violence within the previous 12 months that happened in the context of an argument or a disagreement. The follow-up (Wave 2) is 5 years after Wave 1, so if violence occurred in the relationship in that time period, but not in the 12 months previous to Wave 2, it will not appear in the data. Moreover, not all violence happens in the context of an argument. If the violence is in the context of a general pattern of abuse or control, but not the result of an argument, it may go unreported in the data. For unions that have recently dissolved, respondents the NSFH asked respondents if there was physical violence or injuries due to physical violence in the recently ended relationship, but did not ask other questions about violence in prior relationships.

Within the data, respondents report on both victimization and their own use of violence. There is information gathered from both victims and perpetrators of violence. This is a strength because it allows for comparison of violence victims and violence perpetrators. Furthermore, this is an indication that data in this study are similar to those used by family violence researchers – Family violence researchers(Straus et al. 2006) suggest that a weakness in previous feminist research is the inclusion of only victims or perpetrators (but seldom both). However, there is no indicator of violence motivations,

such as self-defense. Without a measure of self-defense, it is possible to label victims as "perpetrators" who may have been attempting to protect themselves.

The NSFH inadequately addresses the issue of violence frequency. It does ask how many times in the past 12 the respondent used violence (0 thru 3, 4 or more), but this reporting of frequency is subject to the memory recall of the respondent, and to social desirability of the response. Because previous research indicates that men are likely to underreport use of violence (and overestimate victimization) while women are likely to underreport victimization (Kimmel 2002), this methodology is likely to underestimate violence by men and overestimate violence by women.

The NSFH does not address threats of violence, or attempted violence in the relationship. The NSFH also has no measure of nonviolent control or coercion within the relationship. Previous research indicates that men are more likely than women to use nonviolent tactics to force compliance or coercion of a partner than are women (Stark 2007).

These instrumental data flaws are typical in large data sets using the conflict tactics scale or modified conflict tactics scale. One can expect that surface level analyses of frequency of violent acts may appear gender symmetrical. I urge readers to consider the data shortcomings before accepting any semblance of symmetry, and further urge readers to resist automatic interpretation of these findings as an indication of "symmetry" in violence. Rather, researchers should interpret any surface level indication of gender symmetry in violence as an indication that the data at hand is similar to data used by family violence researchers. As such, it should not be taken out of context to infer gender

symmetry when it is only inferring "symmetry of measurement" (Straus et al. 1996: 285-86).

Even taking into account these instrumental and measurement flaws, there are several key elements that make NSFH data ideal for use in this research. Primarily, the NSFH is a large, national data set that primarily measures situational couple violence. It is the consensus among researchers that large national phone samples are deficient to measure severe violence because of sampling techniques that excludes severe violence, the low incidence of severe violence in the general population, and the framing of violence questions in the context of an argument or couple fights. National samples, including the NSFH are more likely to capture less severe and more symmetrical violence (Atkinson et al. 2005; Brush 1990; Johnson 2008; Johnson and Ferraro 2000; Salari and Baldwin 2002).

The NSFH reports on violence victimization, use of violence, and injury. Because the NSFH include interviews or responses from both partners, this research addresses reporting differences by gender, as well as self-reported health outcomes for each member of the partnership. Because poor health is an indication of victimization, results may imply gender differences in outcomes of violence even in cases that may appear "gender symmetrical" on the surface.

Moreover, the NSFH includes indicators for several mechanisms through which IPA leads to poor health; these include stress, social support, and measures of resource allocation. This provides a unique opportunity to examine health outcomes related to social factors, and makes it possible to assess whether or not stress, social support and resource allocation are indeed mechanisms through which IPA leads to poor health

outcomes. Additionally, the longitudinal nature of the data makes it possible to imply causation of any negative health outcomes that might follow violence.

Through statistical analysis of the NSFH, I will address the research questions to determine if there are gendered differences in health effects of IPA. Because men and women begin with different risks, I will stratify the research by gender, and compare IPA males to a control group, and IPA females to a control group. Then I will use the analyses to identify health effects and IPA effects that are in addition to the gender effects. This research will show if there is a causal connection between IPA and health outcomes, and it will identify gender differences in IPA outcomes. Moreover, this research will address whether there are gendered differences in outcomes of SCV couples that previous research has minimized or ignored. This will lead to a better understanding of the role of gender in IPA and in outcomes of IPA.

Variables

Demographic Variables

The NSFH is unique because it assesses primary respondents and their partners, although primary respondent interviews were more complex. Many of the variables listed below have information available for both the primary respondent and the partner or spouse. I report outcomes for spouses and ex-spouses in univariate and descriptive analyses. I use the highest reported violence from either the primary respondent or partner to assess violence exposure in regression analyses. However, I base control variables, regressors, and dependent variables in regression analyses on responses from primary respondents.

- Gender: The data identifies respondents as “male” or “female. I dropped any respondents who did not report gender from the sample data. Gender is dummy coded with male = “1” and female = “0”. I stratify all models by gender to allow assessment of the effects of violence and other factors when holding gender as a constant in each model. This allows for a more thorough assessment of the *effects in the context of a gendered social system* instead of a simple count of sex frequencies. (Anderson 2005).
- Age: I code age as a continuous variable. Any couple where the primary respondent was over age 70 at Wave 1 was dropped from the data because of high prevalence of widowhood, and age-related health decline present at older ages.
- Race & Ethnicity: I code race as white-non-Hispanic (1) and nonwhite or Hispanic (0). Although it would have been interesting to separate race and ethnicity, portions of couples reporting violence in the sample was too low for an adequate analysis of other individual races within the data.
- Relationship Status: In Wave 1, 52.8% of the population was married, and only 3.6% of the population was cohabiting. The remainder of the population was unmarried, divorced or widowed. I dropped widows and widowers from the data. I coded anyone who was married or cohabiting as “1”, while I classified anyone who was not currently married or as “0”. Future research should distinguish between married and cohabiting couples, but the small sample of cohabiting couples made this impossible to do in this data. Cohabiting was grouped with married because evidence suggests that health differences between married and cohabiting couples are nonsignificant (Zheng, Penning, Pollard, and Hart 2003).

- Education: I continuously code education of primary respondents as years of education obtained. For each respondent, the education reported is the highest obtained education by the end of the third wave. Education obtained is time-invariant for respondents over all three waves of data.
- Income: NSFH data measures annual income as a continuous variable for both the primary respondent and the partner. As such, I can assess individual income and couple income. I record income at each wave of data collection, and examined changes through the waves.

Violence Variables

The NSFH asks both the primary respondent and the partner about violence in the relationship. NSFH measures violence framed in the context of an argument or a disagreement. NSFH asks about violence in past 12 months in current relationship. When relationship has ended, NSFH asks if physical violence or injury was a reason for the relationship termination. Measures of violence are variants of the measures used in the conflict tactics scale (Straus 1979), and are thus subject to limitations of the conflict tactics scale in that they inadequately assess motivation, severity, frequency, and nonviolent abuse (Brush 1990). Questions on violence from the NSFH, which is based on a modified version of the Conflict Tactics Scale (Straus 1979), are asked of primary respondents, and spouses. The NSFH asks some questions of cohabiting partners. The NSFH repeats one question of physical violence and two of injury in dissolved relationships. To clarify, the NSFH only asked respondents in a current relationship (married or cohabiting) about verbal aggression, hitting and pushing, gender of perpetrator and victim. Because of a lack of data for individuals not in a current

relationship, only those couples reporting a current relationship are included in samples examining the afore listed types of violence. The NSFH examines all respondents who were in a relationship, or who reported a recently disrupted relationship, for reports of whether arguments became physical, and reports of injuries. I analyze these types of violence for those in a current relationship separately, and then I analyze these types of violence for all individuals in a current or recently disrupted relationship.

The NSFH assess whether or not respondents and partners report being victims of IPA, or report using violence. Because there is no assessment of motivations (including self-defense motives), it is not possible to determine if a respondent or partner is a "perpetrator" of abuse, or if they have used violence for other motives. Although I may refer to those who use violence as "perpetrators" through the paper, I only use this term meaning someone who uses violence, with the understanding that there is not a measure of motive in the data.

The following questions are taken directly from National Survey of Family and Households Interview Schedule for Wave I (Bumpass and Sweet 1988). The NSFH repeats the same questions for Wave 2 and Wave 3 of the data. The NSFH asked each question to both spouses, when the primary respondent was married. Additionally, the NSFH asked the questions in Wave 2 of ex-spouses, and current spouses. The NSFH included some questions for cohabiting partners. These questions are adapted from the Conflict Tactics Scale (Straus 1979).

One weakness of the NSFH is that it did not ask follow-up questions if respondents indicated no physical violence. For the purpose of analysis, if there was no response to a question because a previous question received a negative response, I imputed a missing

response for a response of “no”. In this way, it was possible to compare respondents who reported no violence with respondents who reported some level of violence. Had I not imputed missing responses with “no”, I would have only been comparing respondents who experienced a lower level of violence with those who experienced a higher level of violence.

- Verbal Abuse: The NSFH asked respondents, “There are various ways that married couples deal with serious disagreements. When you have a serious disagreement with your husband/wife, how often do you: a. just keep your opinions to yourself? b. discuss your disagreements calmly? c. argue heatedly or shout at each other? d. end up hitting or throwing things at each other (Bumpass and Sweet 1988; Bumpass and Sweet 1994) ?” Respondents who responded that they argued heatedly or shouted at each other were dummy coded as using “verbal aggression.” Those who reported hitting or throwing things at each other were dummy coded as such.
- Physical Violence The NSFH asked respondents, “Sometimes arguments between partners become physical. During the last year has this happened in arguments between you and your husband/ wife?” (Bumpass and Sweet 1988; Bumpass and Sweet 1994). Respondents who answered “yes” were dummy coded as having reported physical violence in the relationship.
- Primary Respondent Used Physical Violence: The NSFH asked respondents, “During the past year, how many fights with your husband/wife resulted in YOU hitting, shoving, or throwing things at him/her?” (Bumpass and Sweet 1988; Bumpass and Sweet 1994). If a respondent reported having used violence one or

more times, he or she was dummy coded as having used physical abuse. I use dummy coding in regression analyses, while I give more detailed information in univariate descriptive statistics.

- Partner/ Spouse used Physical Violence The NSFH asked respondents, “During the past year, how many fights with your husband/wife resulted in HIM/HER hitting, shoving, or throwing things at you?” (Bumpass and Sweet 1988; Bumpass and Sweet 1994). If the respondent answered positively, it was dummy coded that the partner used violence in the relationship.
- Sometimes there were discrepancies between reports by partners and primary respondents. I explore the discrepancies in the analysis of reporting differences by gender. Because researchers asked primary respondents and partners about self and partner use of violence, if a partner or primary respondent reported violence and the other did not, I use the highest level of reported violence in regression analyses.
- Primary Respondent Injured: The NSFH asked respondents, “Have YOU been cut, bruised, or seriously injured in a fight with your husband/wife?” (Bumpass and Sweet 1988; Bumpass and Sweet 1994). If the respondent answered positively, the case was dummy coded as “Respondent Injured.”
- Partner Injured: The NSFH asked respondents, “Has your HUSBAND/WIFE been cut, bruised, or seriously injured in a fight with you?” (Bumpass and Sweet 1988; Bumpass and Sweet 1994). If the respondent answered positively, the case was dummy coded as “Partner Injured.” Very high portions of the study sample did not report injuries. Only 4 respondents reported being injured, and 1 reported

injuring a partner in the third wave. Although the numbers are higher in Wave 1 and Wave 2, the NSFH does not have high enough reports of these variables to include in longitudinal regression analyses. I include these variables in descriptive statistics and in cross-sectional analyses of Wave 1 and Wave 2 data. The low report of injuries is further evidence that this sample is primarily representative of situational couple violence, or low-level violence where in there are fewer injuries than in more severe types of IPA(Johnson 1995; Johnson 2006). However, there *are* still injuries reported in the sample. This is an indication that some couples in the sample may be experiencing severe violence. Nonetheless, injuries decline at each wave, which may support the idea that couples experiencing more severe violence are not as likely to participate in later waves.

Health and Health-Related Variables

- Physical health variables: The NSFH asks respondents to self-rate their health from poor to excellent based on a comparison to others the same age. I will use this variable to assess physical health. For regression analysis, physical health is dummy coded with 1= "good health or better" and 0 = "fair health or worse."
- Emotional health variables: There are several variables in NSFH that address emotional health of victims. Depression: NSFH assesses how many days in the past week the respondent felt depressed. The response is a continuous variable ranging from 0 to 7. For regression analysis, this is dummy coded as 1 = "experienced depression 1 or more days in the past week" and 0 = "did not experience depression 1 or more days in the past week." Fear: NSFH assesses how many days in the past week the respondent felt fearful. The response is a

continuous variable ranging from 0 to 7. For regression analysis, this is dummy coded as 1 = "experienced fear 1 or more days in the past week" and 0 = "did not experience fear 1 or more days in the past week." The NSFH questions regarding emotional health are composed of a slightly modified version of the Center for Epidemiologic Studies Depression Scale (CES-D)[2], and are similar to the American Psychiatric Association's DSMIV criteria for diagnosing depression (DSMIV, 1994).

Social Variables Related to Health Outcomes

Epidemiological research indicates that several social factors, including stress, social support, and access to resources can influence health outcomes. Additionally, research of intimate partner abuse indicates that social support may be lower, stress higher, and access to resources lower in abusive relationships. I assess these three factors as they relate to health and abuse in this research.

- Stress: The NSFH asks how overwhelmed the respondent feels with housework, paid work, parenting, and marital relationships. The NSFH measures each individual variable on a scale of 1 to 7 with 1 being overwhelming and 7 being manageable. 0 is no housework/paid job, Etc). If the respondent answered that any of the categories were "1" or "2" (overwhelming), I coded it as having

[2] A team of researchers at the University of Wisconsin developed the NSFH questionnaires. While the NSFH adopted some scales from prior surveys, others were slightly modified standard scales. According to Appendix P of the NSFH 2, "Unfortunately, there is not documentation on the origin of each question Bumpass, L. L. andSweet, J. A. 1994. "National Survey of Households and Families Wave 2 (1992-1994) ". Madison, Wisconsin: Center for Demography of Health and Aging Affiliation: University of Wisconsin-Madison.." Where the NSFH documented information on the origin of questions regarding violence and health, or where the information could be otherwise located, I documented this in the variable descriptions in this research.

experienced stress at home. The NSFH also asks respondents to rate paid work as overwhelming to manageable. If respondents reported that paid work was "1" or "2" (overwhelming), I coded it as "1". If they reported lower stress levels, I coded it as "0", or not stressful.

- Social Contact: The NSFH asks several questions related to social support, isolation, and turning to others for help. The NSFH asks each respondent how often they associate with relatives, neighbors, coworkers, and friends socially. Ordinal responses range from "never" to "several times a week" in a scale ranging from "0" (representing no contact) to "4" (representing the most contact). For each respondent, I added together the scores for contact with neighbors, friends, relatives, coworkers, religious organizations, social groups, fraternities, bars, work groups, interest groups, service clubs and recreational activities. Those reporting higher levels of social contact and participation received a higher score than those reporting lower levels of participation. This measure does not allow me to assess if contact was weekly or monthly, but it does allow me to compare the levels of social participation or isolation for respondents. The final scale ranges in responses from a score of "0" for the least social participation to a score of "37" for the respondents with the highest levels of social participation.
- Resources: In addition to the income measure included under "demographic variables," the NSFH includes other resource measures. Respondents are asked how their standard of living would change if they separated from their current partner. If respondents reported that it would stay the same or get worse, I coded it as "0". If respondents reported that their standard of living would improve, I

coded it as "1." Respondents answer whether or not spending money in the household is fair or unfair towards the individual and the partner. If the respondent answered that it was "fair," the response was coded as "1". If spending is unfair, I coded the response as "0." I will use these variables to examine resource allocation within intimate partnerships.

Statistical Analysis

I will use both descriptive and inferential statistics to respond to the research questions listed in Chapter 2 thoroughly. In addition to the desire to examine outcomes in the context of a gendered society, I stratify models by gender because of inherent health reporting differences experienced by men and women. By using gender stratification methods, I will be able to compare males and females to see if there are differences in the statistically significant relationships between outcomes and abuse.

It is important to stratify the samples by gender (as opposed to including a sex-frequency variable as an independent variable), because of the multifaceted relationship between gender and the modeled variables. When sex and gender are represented only as an independent variable, the researcher "ignores the complex ways in which gender operates in social interactions" (Anderson 2005: 856). In other words, using sex as an independent variable assumes that sex is only an individual characteristic, and assumes that when we control for gender, we hold all other things equal. However, gender is much more than an individual characteristic of respondents; it is a characteristic of social interactions (Anderson 2005; Kimmel 2008).

For example, society perceives, administers, and teaches violence differently by gender. Men's violence is interpreted as "masculine" when used against other men;

women's violence is often perceived as being gender inappropriate, or as being less threatening than male violence (Anderson 2005). Likewise, health has been found to be perceived and reported differently by men and women (Gorman and Read 2006). It is the social construction of gender, gendered allocation of resources, gendered training of violence (Anderson 2005), and the myriad of other ways that life is different for men than for women that make it impossible to compare the two as if "all other things are equal." The paths to using violence, violence training, education of violence, and the effects of violence vary by gender. Simplifying this variable to a report of sex ratios cannot contextualize the complexity of the relationship between gender and all other variables. To perceive the effects of being male or female as the same is an incomplete analysis. By stratifying the models by gender, I remove the assumption that the only difference between the groups is the sex identification of "male" or "female." By comparing males to males, and females to females, I hold gender as a constant in each analysis.

Cross-Sectional Analyses

For each wave of the NSFH data, I will complete cross-sectional analyses so it is possible to view a "snapshot" of the relationship between the variables at one point in time. I will also combine the waves from the NSFH into a single panel data set to analyze the data longitudinally and gain insight into whether or not IPA leads to negative health changes over time.

For cross-sectional data analysis, I will use linear and logistic regression models to compare women from violent relationships to women from nonviolent relationships. I will do the same analyses for men. This will allow me to assess if significant relationships between dependent variables and regressors are symmetrical for men and

women. Linear models are reported using robust standard errors to control for heteroskedacticity and decrease the risk of making a type I error.

I test the strength of each cross-sectional model analyzed. For linear regression, I report R-Squared results, and F-test results in Chapter 4. R-squared results indicate the portion of the variance in the dependent variable, which I explain by the independent variables. I expect to see relatively low R-Squared values because of the plethora of variables that can affect health outcomes. I use the F-test to test the significance of the R-Squared. When the F test indicates significant results (prob. F<.05), then the model is considered better than would be expected by chance, and we can reject the null hypothesis that there is not a linear relationship between the dependent variables and the regressors (Garson 2010b). Stata calculates both the F test and the R-Squared test automatically.

For logistic regression, I report the overall likelihood ratio test and the Hosmer-Lemeshow Goodness of Fit test in Chapter 4. The overall likelihood ratio test is a Chi-Squared test that at least one of the coefficients of the regressors is not equal to zero (Garson 2010a). In other words, this tests that at least one of the regressors in the model is significant in predicting the independent variable. Stata calculates this test. Significant findings for this test (prob. chi2<.05) indicate a good fit for the model.

The Hosmer-Lemeshow goodness of fit test is a Chi-Squared test used to assess whether or not the variance explained by the model is significant. This test does not indicate the amount of variance explained in the model, only whether the explained variance is significant or not. I chose to report the Hosmer-Lemeshow test in my results in lieu of the Pearson Chi-Squared goodness of fit test because the Hosmer-Lemeshow

test is seen as more robust, particularly because my models include continuous covariates. This test is unique in that a finding of *nonsignificance* indicates a well-fitting model. The null hypothesis is that there is no difference between observed and model-predicted values, and so nonsignificant findings indicate that the model estimates fit the data at an acceptable level. Significant findings indicate that there may be a problem with the model fit (Garson 2010a).

Panel Data Longitudinal Analyses

For the longitudinal panel data analysis, I use random effects linear regression (XTREG command in Stata 9 software) and random effects logistic regression models (xtlogit command in Stata 9 software) to examine whether or not violence exposure has an effect on self-reported physical health when I control for age, race, education, earnings, partner, and time. Random effects models allow for a between-case variation in outcomes, and allow for assessment of both time variant and time invariant predictors. By using random effects models, I can assess the relationship between changes in violence and control variables and changes in health variables longitudinally.

There are several reasons random effects models are preferred over fixed effects models for this analysis. Random effects panel models are ideal because they allow for between-case comparisons of cases using all three waves of my data. Because it is impossible to know if respondents experienced violence prior to Wave 1, the effects of violence exposure may already be taking place prior to the window of available data. For this reason, I need to be able to compare differences in outcomes of those who never experienced violence to those who did experience violence. Using random effects models

to analyze between-case variation provides a clearer picture of the ways violence affects health over time than would within-case analysis of a fixed effects model.

Moreover, when using logistic regression models, random effects are preferred because fixed effects models would drop out any respondents that did not experience a change in violence status over the three waves. This means fixed effects models would automatically exclude anyone who had never experienced IPA in any of the three waves, or anyone who reported experiencing IPA at all three waves. I am interested in the differences between these groups as well as the differences between individuals who experienced a change in violence status. By using random effects for logistic regression models, I do not limit my sample to only those who experienced a change in violence. Furthermore, random effects models allow for analysis of time invariant control variables (IE: gender, race, highest completed education) in the models. Fixed effects models are limited to only analysis of time-variant variables, and are not ideal for this research. Although fixed effects models would control for time-invariant variables in the error term, I am interested in assessing the coefficients for these variables. Therefore, random effects models are the best choice.

If there were high correlation among variables, it would suggest potential collinearity. Because of this, I completed correlation matrix before running cross-sectional regression analysis, and found that there were no problems with correlation in the data. It is important to assess collinearity in the cross-sectional models because the nature of panel data, wherein each respondent is included at multiple waves, can lead to overestimated collinearity in panel models.

I also assessed the distribution of variables. Age and income are skewed in the data, but other variables either are dummy variables, or have normal distributions. I ran models with age and income logged, and results were substantively the same as the unlogged versions, so I chose not to log the variables for ease in interpreting outcomes in the logistic regression models. I will discuss this in univariate reports of the results section.

For each longitudinal model in the research, I report results of tests of the models in Chapter 4. For random effects linear regression models, I report the r-squared within, r-squared between, and overall R-Squared. Additionally, I report results of a Wald test. As with the R-squared in the cross-sectional linear regression models, the r-squared tests here assess the amount of variance in the dependent variable that is explained by the independent variables or regressors. R-squared within reports the variance within individual cases (assessed at a minimum of two data waves), while the r-squared between reports the variance between cases. The Wald test examines significance of the regressors in predicting the dependent variable. The null hypothesis of the Wald test is that the coefficient of all regressors is zero. A significant result indicates that at least one of the regressors is significant in predicting the dependent variable. A significant result (prob. chi2<.05) indicates a good fit for the model (Garson 2010b).

For random effects logistic regression models, I report the results of the overall likelihood ratio test, the results of the Wald test, and the result of the likelihood ratio test of RHO. Researchers interpret the overall likelihood ratio test for random effects models in the same manner as the overall likelihood ratio test for the cross-sectional models. Researchers can interpret the results of the Wald test in the same manner as the Wald test

reported in random effects linear regression models. RHO is a measure of the panel-level variance. If Rho is zero, then the panel-level variance component is unimportant. When Rho does not equal zero, then the panel component is important. A significant result (prob. chi bar < .5) indicates that assessing the data longitudinally is important for predicting the outcomes of the dependent variables, and indicates that the longitudinal panel data model is better able to predict the dependent variable than the cross-sectional models (Gayle 2003). A full report of all model tests is in Chapter 4 of this dissertation.

Strengths and Limitations to Study

As with any research study, this research has limitations. Primarily, IPA is difficult to study because of social desirability effects. It is impossible to know how many individuals in the sample were not truthful about IPA perpetration or victimization. Moreover, it is impossible to know how many victims chose not to participate in the surveys due to abuse. If a perpetrator were monitoring a victim by phone calls, she would want to avoid a lengthy phone survey, and thus decline participation in the surveys used in this study. If perpetrators monitor phone calls, the perpetrator may have been more likely to answer the survey instead of the victim. This is less of a concern with NSFH data set because the NSFH interviewed both partners.

Another limitation is that the NSFH does not account for nonviolent forms of abuse, sexual abuse, or for context of abuse within the relationship. It was not possible to assess coercive control or power dynamics within the relationship. Without assessment of sexual violence, or adequate assessment of violence from past partners, the outcomes are severely limited. My coding accounted for this by assuming that only those who reported violence experience violence, but this is an unlikely assumption. The NSFH did not ask

non-cohabiting or non-married respondents a full range of questions about violence. This left a large amount of missing data in violence victimization. Furthermore, because it is not socially acceptable to report IPA, we can assume that there were individuals who participated in the survey, and did experience violence, but did not report it in the data. Although the data are longitudinal and follow individuals over 15 years, there is no measurement of violence before this time point. If an individual experienced violence between the waves, but not "during the past year (Bumpass and Sweet 2003)," the violence was not reported in the data. This means that many individuals may have experienced IPA that was unaccounted for because the NSFH did not collect data frequently enough, and responses were limited to violence that occurred in the one year prior each wave of data collection.

The NSFH data in this study are an unbalanced panel data set. Whenever one uses an unbalanced panel data set, it is possible that the respondents lost over time are not randomly lost from the sample. We know that this is the case in NSFH data. Because of funding shortages, respondents in Wave 3 are limited to those over the age of 45, or those under the age of 45 who had focal children from Wave 1 who were eligible for interview. Because intimate partner abuse is more common among younger couples, the NSFH may have inadvertently excluded many younger couples experiencing violence from Wave 3.

In addition to an undercount of young couples in the third wave, it is possible that even among those not excluded in the funding cut, the exclusion of some participants at later waves may not be random. For example, Salari and Baldwin (2002) suggest that respondents experiencing more severe violence may be present in Wave 1, but may be more difficult to track over time, and thus missing from later waves. If this is the case,

then reports of IPA in the sample would be an undercount of violence. When considering both the exclusion of younger couples, and the likely exclusion of more violent couples over time, the results of this research are considered conservative estimates.

There are many limitations to using a revised conflict tactics scale. The questions in the NSFH assume that all violence is in the context of an argument. Kimmel points out that framing IPA as the result of an argument "Assumes that domestic violence… has more to do with being tired or in a bad mood than it does with an effort to control another person" (Kimmel 2002: p. 1342). This context of an argument tends to capture more low-level violence, but may undersample more severe violence. The CTS does not assess sexual violence, and does not adequately assess violence from previous partners. There is no identification of violence motivations, or nonviolent forms of abuse in the data. These survey and data methodological shortcomings make it impossible to address a full range of abusive behaviors. However, the survey is ideal and adequate for addressing the question of common couple violence as family violence researchers often research it.

Future research should attempt to secure longitudinal data that assesses nonviolent forms of abuse to identify the effects of these forms of abuse on health. The NSFH does not ask who instigated the violence, nor if there was a motive of self-defense. Future research studies should include measures indicating motives behind violent acts.

However, even with limitations as stated, strengths of the current study make it a substantial contribution to current IPA literature. The exclusion of severe violence, which many feminist researchers see as a weakness, is a strength for this study because it allows for analysis of gender differences among couples experiencing less-severe violence or mutual violence. Because the most severe cases were most likely not included

in the sample, there is a better representation of situational couple violence in the sample. Control of a partner is not the theoretical motivation for this type of violence, so victims may not have the same apprehensions about reporting violence. Moreover, severe limitations of the CTS in measuring violence may actually be helpful in measuring SCV. For example, the CTS and questions in the NSFH assume that violence is the result of an "argument" (Bumpass and Sweet 1988; Bumpass and Sweet 1994; Bumpass and Sweet 2003), which is more the case in SCV than in couples experiencing severe violence motivated by control instead of stemming from an argument.

A crucial strength of the data is the longitudinal nature of the sample. The sample includes only respondents who appear in the sample at a minimum of two of the waves, and who have responses for at least two waves on key variables. This means that rather than assessing simple correlation between variables, we can assess the relationship of variables through time, and more accurately imply causation. This is not possible with cross-sectional data.

The large sample size made it possible to analyze IPA, which is not highly prevalent in the population. It also made it possible to include all necessary control variables in the models without fear of a shortage of degrees of freedom.

Because of gender stratification of models, I assess gender as more than only in independent variable. This allowed for analysis of the ways that outcomes varied when holding gender as a constant in the equations, and allowed for analysis of IPA within the context of a society that is not gender neutral. So doing allowed for a richer analysis of gender than is possible if researchers only include it as a sex ratio.

A final strength of the research was the innovativeness of the author in overcoming weaknesses of the CTS by using health outcomes to measure victimization. Through use of typically “family violence” data combined with “feminist” conceptualizations of gender symmetry, I explored situational couple violence in a way that previous research has not done. The implications of this research include expanding understanding of gender asymmetries in SVC, and moving toward a resolution of the gender symmetry debate.

CHAPTER 4

RESULTS

Introduction

Earlier chapters highlighted a need for research of the gendered effects of situational couple violence. As previously noted, research to date has neglected to analyze SCV using feminist conceptualizations of "gender symmetry." Chapter 4 addresses this research gap using NSFH data in order to determine whether my hypothesis, that feminist conceptualizations will reveal gender asymmetry in research of situational couple violence even when using typical family violence data, is correct.

Chapter 4 begins with description of sample characteristics. After the sample description, I address the above research hypotheses through analysis of the research questions presented in Table 2.2. Each research question centers on a different aspect gender symmetry within SCV in an attempt to assess whether or not SCV is "gender symmetrical" fully. Due to NSFH data limitations (see Chapter Three for complete description), it is not possible to assess gender asymmetries in violence motives, nonviolent abusive or controlling behaviors, sexual violence, or self-defense. I will discuss interpretations and implications of results presented in this chapter in Chapter Five of this dissertation.

Sample Characteristics

The sample includes data on primary respondents, and on their partners. It is composed of about 43% male primary respondents and about 57% female primary respondents. Over 76% of male primary respondents and 72% of female primary respondents were white. Male primary respondents averaged 38 years old at the first interview, and female respondents averaged almost 37 years old at the first interview. Males averaged a little more than 13 years of education, while female respondents averaged a little less than 13 years of education. Information on age, gender, and education of partners are located in Table 4.1. Nearly two-thirds (62.01%) of respondents were married or cohabiting with a heterosexual partner at the time of the first interview (see Table 4.2).

Throughout the duration of the study, many participants experienced changes in marital and cohabitation status. Table 4.2 is a report of these changes. In Wave 1, 75% of the study sample was married or cohabiting. By Wave 2, this had increased to 79%. By Wave 3, almost 93% of the sample was married or cohabiting. Part of the apparent increase in the percent of the sample in a current relationship could be that younger couples who had not yet married, or were not cohabiting at Wave 1 may have transitioned into a relationship by the third wave. Sample selection by the NSFH also plays a part in these statistics. Wave 3 only includes couples who had a focal child available for interview, or who were over the age of 65 by the third interview. Additionally, I eliminated any widows or widowers from the study sample. This selection of couples with children and older couples may have lead to an increased portion of married couples in the population.

Table 4.1
NSFH Demographic Characteristics of Primary Respondents and Partners

	Variables Used	Male primary respondents				Female primary respondents			
		Male Primary Resp.		Secondary Resp. (Female partner at W1)		Female Primary Resp.		Secondary Resp. (Male partner at W1)	
		%	(N)	%	(N)	%	(N)	%	(N)
Gender		42.95	3916	46.97%	2652	57.05	5202	53.14%	3006
Race/ Ethnicity	White (nonhispanic)	76.64	2998	81.92	1976	72.18	3750	82.79	1987
	Non – White or Hispanic	23.36	914	18.08	436	27.82	1445	17.21	413
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
Mean Age at Initial Interview (in years)		38.27	13.19	37.41	12.70	36.79	12.16	39.40	12.62
Highest Education Acquired		13.14	3.02	12.96	2.68	12.76	2.68	13.05	3.08

Table 4. 2
NSFH Demographic Characteristics

Partner Status of Primary Respondent		Marital Status Wave 1 : %, (n)	Marital Status Wave 2 : %, (n)	Marital Status Wave 3: %, (n)
1	Prim. Resp.: Currently married or cohabiting	75.08% (5658)	78.98% (6012)	92.71% (2720)
0	Prim. Resp.: Not currently married or cohabiting	24.92% (1878)	21.02% (1600)	7.29% (214)
	Missing	1582	1270	1545

There were substantial income differences between males and females in the study sample. At Wave 1, male primary respondents earned over $11,000 more than their partners did annually. Female primary respondents earned about $19,527 less than their partners (see Table 4.3). By Wave 3, the gap widened and men earned an average of $24,324 more than their partners did, while women earned $24,465 less than their partners did. This is partially due to higher rates of male employment than female employment at each of the three waves.

Income was skewed in each wave of the data (see Figures 4.1 - 4.3). By logging income, it appeared to follow the distribution of the normal curve better. However, it is very difficult to interpret a log of income in logistic regression models. I ran models with income logged and with income unlogged, and results were substantively the same. For simplicity of interpreting results, I left income in its unlogged form for all analyses. Additionally, the data did not include a report of income for every respondent. Income was missing in 8% of cases in Wave 1, 37% of cases in Wave 2, and 49% of cases in Wave 3. Because of this, I replaced missing values with the sample mean. I also add a dummy variable to control for whether the income was missing and replaced by the mean in all applicable analyses.

Research Question One: Symmetry or Asymmetry in Violence Victimization and Perpetration

The first research question assesses gender symmetries in violence reporting use of violence, and victimization, by gender. The data include responses from both partners, which allows for analysis of violence while holding gender as a constant. Table 4.4 and Table 4.5 include results for married and cohabiting. Table 4.6 includes results for divorced or separated respondents. Please note that the two groups are not mutually exclusive, as some respondents

Table 4.3
Demographic Sample Characteristics - Income and Employment.

	Wave 1		Wave 2		Wave 3	
	Mean	SD	Mean	SD	Mean	SD
Mean Annual Income						
Male Respondent income (n=)	22,036	25,199	33,524	25,407	54,337	43,766
Female Partner income (n=)	10,887	16,441	19,691	15,316	30,013	24,114
Female Respondent income (n=)	9,553	11,064	20,940	18,137	32,950	33,235
Male Partner income (n=)	29,080	33,397	35,166	26,481	57,415	54,084
Percent Employed	%		%		%	
Percent of males Primary Respondents employed or	83.77		81.27		92.55	
Female partner	60.55		64.95		89.10	
Percent of female Primary Respondents employed	65.37		64.67		90.07	
Male partner	84.97		82.77		90.05	

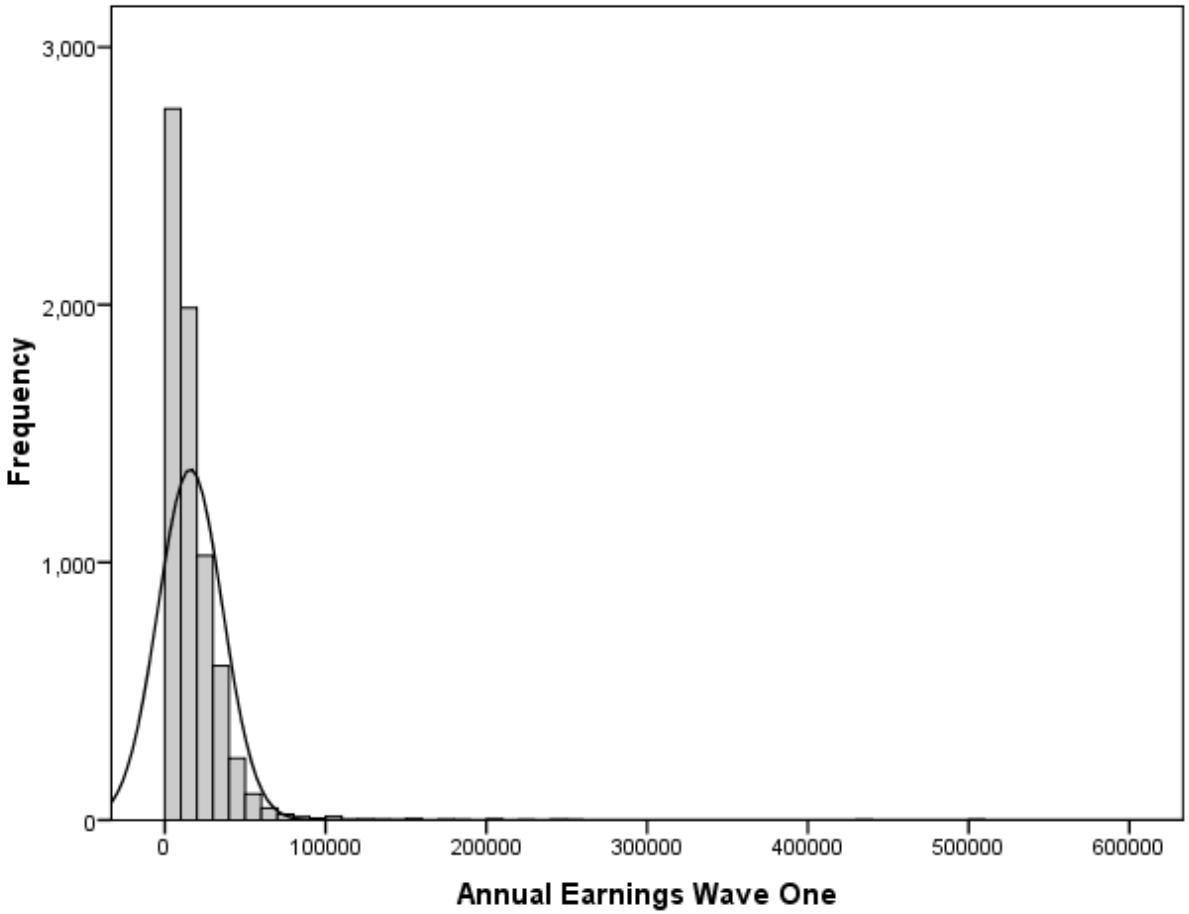

Figure 4. 1 Income Wave 1

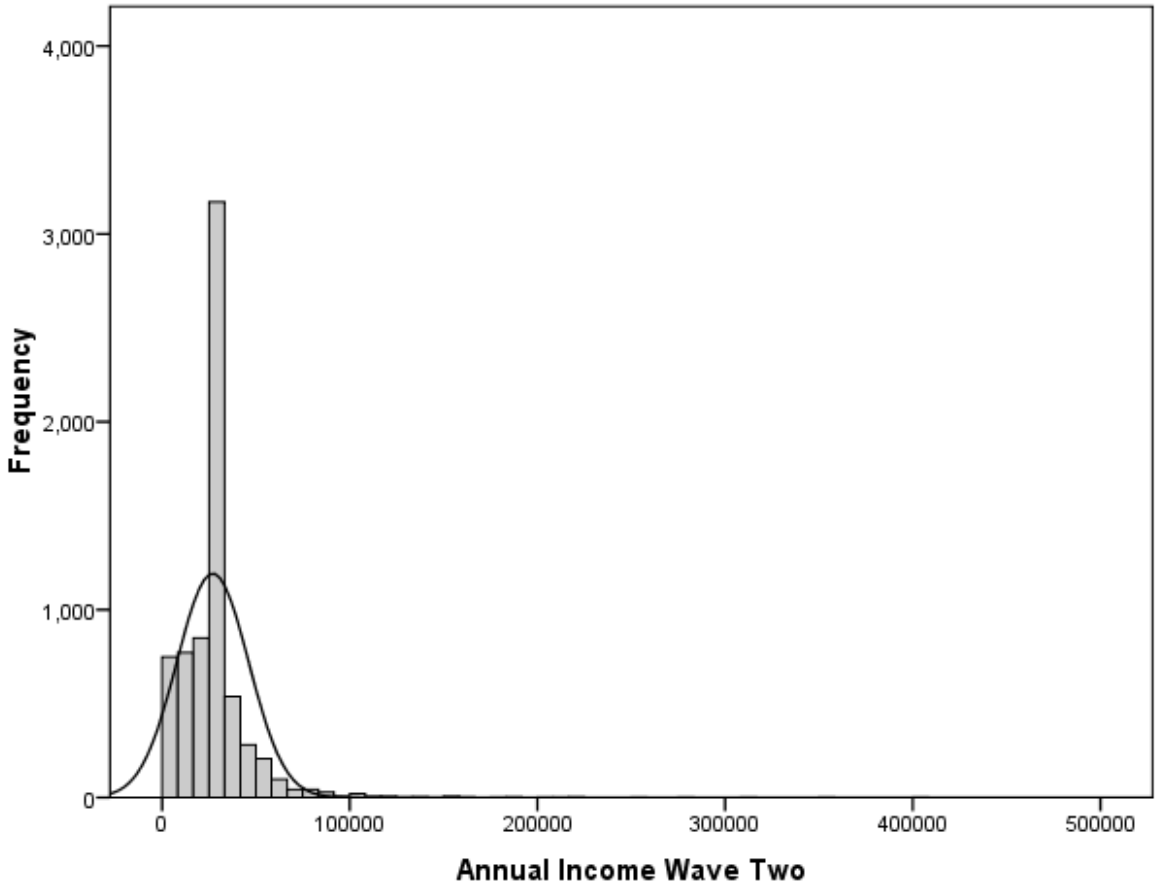

Figure 4. 2: Income Wave 2

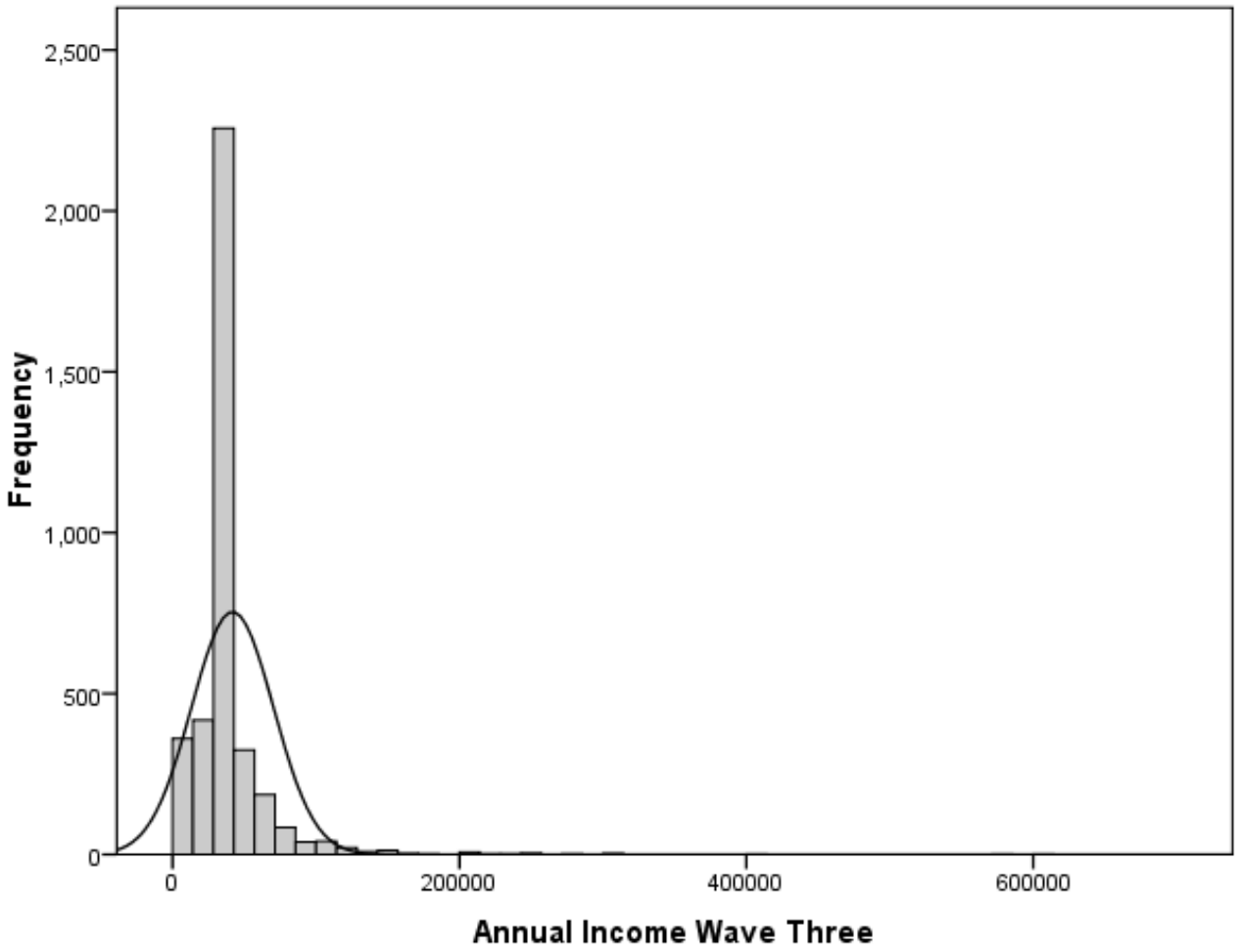

Figure 4. 3: Income Wave 3

Table 4.4
Currently Married & Cohabiting – Violence Reported by Primary Respondent or Current Spouse on Current Relationship

		Wave 1			Wave 2			Wave 3		
Person reporting violence in relationship		Combined (%)	Males (%)	Females (%)	Combined (%)	Males (%)	Females (%)	Combined (%)	Males (%)	Females (%)
Verbal aggression (argue heatedly, shout)	Never	50.46	58.04	63.59	45.98	52.97	55.67	55.91	64.78	65.73
	Seldom	23.21	25.51	20.38	24.15	28.06	21.63	29.27	26.74	23.36
	Sometimes	19.66	13.71	12.28	21.81	14.87	17.14	11.99	7.06	8.84
	Very often	5.2	2.2	2.98	6.73	3.55	4.49	2.37	1.26	1.67
	Always	1.47	0.54	0.77	1.33	0.55	1.06	.47	0.16	0.39
Hit/ Throw things when disagree	Never	90.51	94.41	94.48	92.25	95.87	94.84	97.75	98.69	98.29
	Seldom	6.64	3.93	3.96	5.43	3.05	3.47	1.9	0.99	1.56
	Sometimes	2.05	1.3	1.21	1.64	0.68	1.28	.27	0.16	0.12
	Very often	.43	0.23	0.25	.37	0.29	0.22	.07	0.1	0.04
	Always	.37	0.13	0.1	.30	0.11	0.2	.02	0.05	0.0
Arguments became physical	Yes	8.05	4.97	5.17	5.31	3.18	3.59	1.81	.99	1.67
	No	91.95	95.02	94.83	94.69	96.82	96.41	98.19	99.01	98.33
Times respondent hit, shoved, threw things at partner in past year (self-reported perpetration)	Never	94.58	96.81	96.73	96.0	97.48	97.06	98.93	99.48	98.91
	One time	2.63	1.38	1.65	2.21	1.58	1.44	.67	0.37	0.7
	Two times	1.29	1.12	0.83	.98	0.53	0.85	.25	0.1	0.23
	Three times	.73	0.46	0.38	.53	0.24	0.39	.13	0.00	0.16
	Four + times	.76	0.23	0.4	.28	0.18	0.26	.00	0.05	0.00
Times Partner hit, shoved, threw things at respondent in past year (self-reported victimization)	Never	94.52	96.58	96.89	96.24	97.85	97.75	99.11	99.53	99.65
	One time	2.34	1.2	1.46	2.07	1.42	1.34	.54	0.31	0.19
	Two times	1.49	1.15	0.71	.82	0.47	0.47	.20	0.1	0.08
	Three times	.84	0.64	0.46	.46	0.13	0.24	.11	0.00	0.08
	Four + times	.81	0.43	0.48	.41	0.13	0.2	.04	0.05	0.02

Table 4.5
Married or Cohabiting Couples– Dummy Variables Violence Reported By Primary Respondent or Current Spouse on Current Relationship

		Wave 1			Wave 2			Wave 3		
Person Reporting Violence in Relationship		Combined Male & Female (%)	Male (%)	Female (%)	Combined Male & Female (%)	Male (%)	Female (%)	Combined Male & Female (%)	Male (%)	Female (%)
Verbal aggression (argue heatedly, shout)	Yes	49.54	41.96***	36.41***	54.02	47.03***	44.33***	44.09	35.22	34.27
	No	50.46	58.04***	63.59***	45.98	52.97***	55.67***	55.91	64.78	65.73
Hit/ Throw things when disagree	Yes	9.49	5.59	5.52	7.75	8.15	7.45	2.25	2.15	2.34
	No	90.51	94.41	94.48	92.25	91.85	92.55	97.75	97.85	97.66
Arguments became physical	Yes	8.05	4.97	5.17	5.31	3.18	3.59	1.81	.99	1.67
	No	91.95	95.02	94.83	94.69	96.82	96.41	98.19	99.01	98.33
In past year, respondent hit or shoved partner	Yes	5.42	5.87	5.07	4.00	4.07	3.94	1.07	.78	1.29
	No	94.58	94.13	94.93	96.00	95.93	96.06	98.93	99.22	98.71
In past year, partner hit or shoved respondent	Yes	5.48	6.41***	4.79***	3.76	3.97	3.61	.89	.99	.82
	No	94.52	93.59***	95.21***	96.24	96.03	96.39	99.11	99.01	99.18

Notes: *** indicates that a Fishers Exact Chi-Squared test measuring expected and observed values for males and females reporting of violence for each wave was significant at the .001 level. To be specific, a Fishers Chi-Squared test indicated significant differences in expected and observed values for men and women reporting verbal aggression in Wave 1 and Wave 2, while the same test showed significant differences in expected and observed values for men and women reporting being hit or shoved by a partner in the past year at Wave 1.

Table 4.6
Violence Reporting for Separated or Divorced Respondents Only

		Wave 1			Wave 2			Wave 3		
Person reporting violence in relationship		Combined (%)	Male (%)	Female (%)	Combined (%)	Male (%)	Female (%)	Combined (%)	Male (%)	Female (%)
Arguments became physical	Yes	5.15	2.5***	7.15***	1.2	1.58***	3.15***	.40	.84***	2.34***
	No	94.85	97.5***	92.85***	98.8	98.42***	96.85***	99.6	99.16***	97.66***

Notes: In each of the waves in this table, the Fishers Chi-Squared test indicated differences in expected and observed values for divorced or separated men and women reporting physically violent arguments. The differences were significant at $p < .001$ in each wave.

who are now married or cohabiting may have also had a recently ended relationship. Results in Table 4.4 include full report of violence outcomes and prevalence as reported by males and females combined reports, males separately, and females separately for each relationship. The results of this table are simplified and presented in a condensed form in Table 4.5. This table condenses results to dummy variables of those who reported violence, and those who did not, for each measure of violence and verbal aggression. I use the dummy variable measures in Table 4.5 in regression analyses later in this dissertation. Additionally, condensing of the tables into these more meaningful groups makes it possible to test for significance between men and women who report violence and those who do not. I use Fishers Exact Test, a Chi-Squared test, to examine whether or not there are significant differences in reporting of violence by gender for the dummy variables presented in Table 4.5

Overall, results from Table 4.4 and Table 4.5 indicate high levels of verbal aggression, and low levels of physical violence within the study sample. I do not test for significant differences between groups for Table 4.4 because the interpretations are much easier for Table 4.5 , and the data contained within this table are just a condensed version of Table 4.4.

The low levels of physical violence coupled with similar reporting by gender is an indication respondents in the sample experiencing IPA are likely to be experiencing situational couple violence. Chi-Squared tests comparing expected and observed male and female reporting of verbal aggression confirm that in Wave 1 ($P<.001$) and Wave 2 ($P<.001$), these differences in reporting verbal aggression are statistically significant. In

Wave 3, there is not a significant difference between male and female reporting of verbal aggression (P=.53).

Also using a Chi-Squared test, there are no significant differences between male and female reporting of hitting or throwing in relationships in Wave 1 (P=.89), Wave 2 (P=.23) or Wave 3 (P=.69). In Wave 1 and Wave 2, there are no significant differences in reporting that arguments became physical in Wave 1 (P=.70) or Wave 2 (P=.32), or Wave 3 (P=.054; marginally significant). Overall, results of Table 4.5 indicate that there are few significant differences in reporting by men and women. In other words, the findings point toward symmetry of reporting of violence by gender. However, one must keep in mind that there were low portions of abuse reported in each of the areas measuring physical violence. Additionally, with the exception of "Hitting or Throwing Objects," at least one wave of data indicated a significant difference in observed and expected values given by men and women in abuse reporting.

Moreover, these results represent *symmetry in reporting*, but not gender symmetry in violent acts because most of the questions asked do not identify *who* is using violence in the relationship, or who is being victimized by the violence. However, one question does identify use of violence and violence victimization of respondents and partners. Chi-Squared tests indicate that there are no significant differences in gendered reporting of violence use in Wave 1 (P=.11), Wave 2 (P=.78) or Wave 3 (P=.14). However, there are significant differences between male and female reporting of victimization in Wave 1 (P=.008), but not in Wave 2 (P=.40) or Wave 3 (p=.63).

The reported percentages included in the table indicate that men often report violence more often than do women. Males are more likely to report verbal aggression

than females in every wave (Wave 1: 42% males, 36% females reported verbal aggression; Wave 2: 47% males, 44% females reported verbal aggression; Wave 3: 35% males, 34% females reported verbal aggression). Males report higher rates of hitting or throwing in two of the three waves. Males also report higher levels of perpetration than females in 2 of 3 waves, and higher levels of victimization than females in all three data waves. The only area where married or cohabiting female partners report higher violence than males is in reports that arguments became physically violent (see Table 4.5).

Results in Table 4.6 indicate that rates of women abused by previous partners are much higher than that of men. For all three data waves, Chi-Squared tests indicate that there are significant differences in observed and expected values for gendered reporting of physically violent arguments (Wave 1, Wave2, Wave 3: $\chi 2$ $p<.001$). In the study sample, females report double or triple the rates of physical violence with previous partners than are reported by men. Unfortunately, because of data limitations, we have no way of analyzing gender differences in the use of violence in these relationships, but we can conclude that women report experiencing physical violence in prior relationships at higher rates than do men.

Conclusions: Research Question One

Overall results of research question one indicate that for married and cohabiting couples, there are relatively few significant differences in expected and observed values for gendered reporting of violence in relationships. When differences are significant, married and cohabiting men are more likely to report violence than are women. On the other hand, when a couple has broken up, there are significant differences between

groups, and women are more likely to report physical violence from the terminated relationship than are men.

Research Question Two: Symmetrical or Asymmetrical Injuries

The second research question addressed in this dissertation is whether there is "gender symmetry" in partner-inflicted injury. Low rates of reported injuries in this sample indicate that injuries from intimate partner abuse and violence are rare in the sample. Unfortunately, the extremely low rates of violence make it impossible to get an accurate account of the effects of violence when assessing injuries inferentially. Because of this limitation, assessment of this research question is limited to univariate analyses of injuries. I do stratify these analyses by gender and use Chi-Squared tests to determine if there are differences in expected and observed outcomes by gender. Researchers can better examine injuries when studying a sample that has high rates of exposure to injuries, such as shelter samples, emergency room samples, or police data samples.

A great limitation of the NSFH is that injury assessment does not specify severity of the injuries, only whether or not there were injuries. This makes it impossible to differentiate between a small scratch, and a visit to the emergency room. One strength of injury assessment in this data is that the NSFH asked individuals in current relationships and individuals in recently disrupted (by divorce or separation) relationships about injuries due to intimate partner violence. Reports by married respondents are included in Table 4.7. Results for divorced or separated respondents are included in Table 4.8.

For each table, I completed several Chi-Squared tests using a Yates correlation to examine differences in observed and expected values by gender for each of the measures

Table 4.7
Married and Cohabiting Respondents– Injuries Reported by Primary Respondent and Current Partner

		Wave 1			Wave 2			Wave 3		
		Combined %	Male %	Female %	Combined %	Male %	Female %	Combined %	Male %	Female %
Self-reported injury (by primary respondent and spouse)	Yes	1.84	0.62 (***)	1.44 (***)	1.70	0.59 (***)	1.28 (***)	.40	0.09 (*)	0.34 (*)
	No	98.16	99.38 (***)	98.56 (***)	98.3	99.41 (***)	98.72 (***)	99.60	99.91 (*)	99.66 (*)
Self-reported perpetration (by primary respondent and spouse)	Yes	1.38	0.91 (^)	0.67 (^)	1.16	0.69	0.61	.07	0.04	0.02
	No	98.62	99.09 (^)	99.33 (^)	98.84	99.31	99.39	99.93	99.96	99.98
Primary respondent injured – reported by primary respondent or partner	Yes	1.84	0.88 (^)	1.14 (^)	1.49	0.69 (**)	1.04 (**)	.33	0.07 (*)	0.27 (*)
	No	98.16	99.61 (^)	98.86 (^)	98.51	99.30 (**)	98.96 (**)	99.67	99.93 (*)	99.73 (*)
Primary respondent hurt partner – reported by primary respondent or spouse	Yes	1.38	0.65 (*)	0.97 (*)	1.2	0.59 (*)	0.86 (*)	.13	0.08 (*)	0.09 (*)
	No	98.62	99.35 (*)	99.03 (*)	98.8	99.41 (*)	99.14 (*)	99.87	99.92 (*)	99.91 (*)

Notes: I used $\chi 2$ tests with a Yates correlation to examine differences in expected and observed values for males and females for these measures of violence. I report significance in the table as follows: P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = (^

Table 4.8
Separated and Divorced Respondents– Injuries reported by Primary Respondent and Ex-partner [3]

		Wave 1			Wave 2			Wave 3		
		Combined %	Male %	Female %	Combined %	Male %	Female %	Combined %	Male %	Female %
Self-reported injury (by primary respondent and ex)	Yes	3.41	1.10 (***)	5.15 (***)	2.24	0.61 (***)	1.49 (***)	1.25	0.20 (***)	1.09 (***)
	No	96.59	98.90 (***)	94.85 (***)	97.76	99.43 (***)	98.51 (***)	98.75	99.80 (***)	98.91 (***)
Self-reported perpetration (by primary respondent and ex)	Yes	.00	0.00	0.00	.83	0.55	0.63	.13	0.04	0.09
	No	100.0	100.0	100.00	99.17	99.37	99.37	99.87	99.96	99.91
Primary respondent injured – reported by primary respondent or ex- partner	Yes	3.41	0.47 (***)	2.94 (***)	1.84	0.55 (***)	1.36 (***)	1.0	0.18 (***)	0.82 (***)
	No	96.59	99.53 (***)	97.06 (***)	98.16	99.34 (***)	98.64 (***)	99.0	99.82 (***)	99.18 (***)
Primary respondent hurt partner – reported by primary respondent or ex-partner	Yes	.83	0.63 (***)	2.21 (***)	1.24	0.61	0.75	.4	0.07 (**)	0.36 (**)
	No	99.17	99.37 (***)	97.06 (***)	98.76	99.39	99.25	99.6	99.93 (**)	99.64 (**)

Notes: I use $\chi 2$ tests with a Yates correlation to examine differences in expected and observed values for males and females for these measures of violence. I report significance in the table as follows: P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = (^)

[3] Wave 1 reports only include reports of primary respondent. Waves 2 and 3 include reports from ex- partner and primary respondent when available in the data.

of violence. Where Chi-Squared tests indicated significant differences in observed and expected values for males and females, I noted this in the tables.

Researchers using the NSFH could calculate injuries as self-reported or relationship-reported. I first assess self-reported injuries and injury perpetration. These include the self-reported injuries of male primary respondents and male partners of female primary respondents under the category “male.” They also include self-reported injuries and injury perpetration of female primary respondents and female partners of male primary respondents under the category “female.” Results of self-reported injuries reported by married or cohabiting respondents indicate that in all three waves, females report higher levels of injury victimization. A Chi-Squared test of each wave indicated that there were significant differences in the observed and expected values, so we can conclude that females do experience more injuries than males in the study sample (see Table 4.7). In each case, the percent of males who report injuries is less than half of the percent of females who report injuries from IPA (see Table 4.7). There were marginally significant differences in reporting of perpetration by men and women in Wave 1 (P=.08), but no significant differences in Wave 2 or 3.

Self-reported results of injuries by divorced or separated respondents indicate that females report much higher rates of injury victimization from previous partners than do males. Again, Chi-Squared tests indicate that these differences between observed and expected values are significant for each data wave. However, the results also indicate that both men and women report very low rates of perpetration of injuries in previous relationships. In Wave 1, not a single respondent reported using violence against a former

partner (see Table 4.8). When divorced or separated respondents do report perpetration in Wave 2 and 3, there are no significant differences in reporting of perpetration by gender.

Another way to assess injuries is to include partner reports of injury or injury perpetration to the primary respondent. This makes it possible to assess whether either partner in the relationship reported violence use or victimization. Instead of only including self-reports, inclusion of a partner report of victimization or perpetration toward a primary respondent allows us to account for injuries present in the relationships that respondents may not have reported due possible gendered reporting differences. In Table 4.7, we see that for married and cohabiting respondents, females report higher rates of both injury victimization (Wave 1 $p=.08$, Wave 2 $p<.01$, Wave 3 $p<.05$), and injury perpetration ($P<.05$ in all three waves) than do males. Reports of recently disrupted relationships (Table 4.8) indicate that females report much higher levels of injury ($P<.0001$ at all three waves), and higher levels of injury perpetration (significant at Wave 1 and 3) than do men.

Conclusions: Research Question Two

Overall, results of this research question indicate that females are injured more often in abusive relationships than are males. There is no evidence of significant differences in self-reported injury perpetration by gender when all relationship types are included. This is an indication that men and women generally report similar levels of violence perpetration. However, in every wave of data, females are more likely to report injuries from IPA than are males. This is true regardless of whether a relationship is current or former.

Research Question Three: Symmetrical or Asymmetrical Health Outcomes

One way to examine gender symmetry is to determine whether there are symmetries in physical and emotional health outcomes related to IPA exposure. Although it is not possible to directly assess emotional health, there are indicators of poor emotional health (depression and fear) that will be assessed. In this research, I will examine symmetries in self-reported physical health compared to others.

Physical Health Outcomes

Univariate Analyses

Univariate analysis indicates that men and women report similar health in the sample study. I report health using a 5-point scale of very poor (1), poor (2), fair (3), good (4), and excellent (5). For females, the mean score in Wave 1 was 4.02, which is good health (see Table 4.9). For males, the mean score was 4.09, which is also good health. In Wave 2, females and males both had mean physical health scores in the "fair" range, but the male mean score was 3.97, while the female mean score was 3.39. In Wave 3, the mean health score for both males and females was 3.95. Although these results indicate that there are not large differences in the reporting of physical health by males and females, the analyses of health in this research are each stratified by gender because previous literature suggests that health may be reported and experienced differently by men and women (Matthews et al. 1999). Please see Figure 4.4. Table 4.10 shows self-reported health collapsed into a dummy variable with "1" being "good health or better" and "0" being "fair health or worse." I collapsed the categories as such so I can more easily include them in logistic regression analyses. I made the division between good and fair health because it was the best way to split the groups into somewhat similar portions,

Table 4.9
Univariate Analyses of Health as Reported by Primary Respondent

		Wave 1				Wave 2				Wave 3			
		Female		Male		Female		Male		Female		Male	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Self-reported physical health – compared to others same age	Mean score (1-5; 1 = very poor, 5 = excellent)	4.02	.82	4.09	.81	3.39	.86	3.97	.82	3.95	.92	3.95	.91

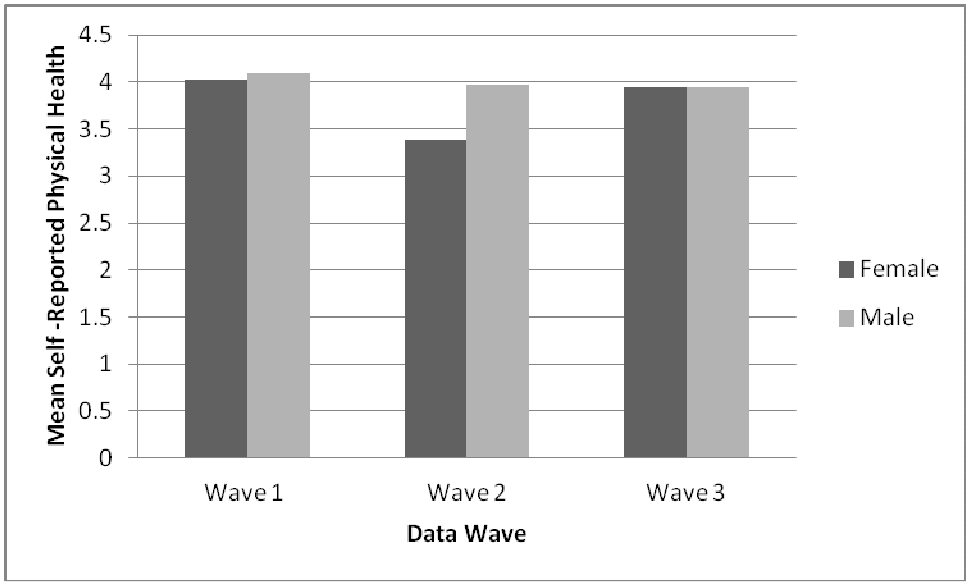

Figure 4.4: Mean self–reported physical health by gender

Table 4.10
Physical Health as Dummy variable – For Use in Logistic Regression Analyses

	Wave 1		Wave 2		Wave 3	
	Female	Male	Female	Male	Female	Male
	%	%	%	%	%	%
Good health or better (dummy)	79.13	82.05	75.84	78.81	74.16	74.30

while still maintaining categories that made sense. It would not seem logical to divide "excellent" health from "good health or worse." Nor would it make sense to place "fair" health with those reporting good health. Where the majority of respondents report their health as good or better, this division will allow for examination of whether or not those exposed to violence experience poorer health than the average (each mean score was above 3.0). Results indicate that in Wave 1, 79% of women and 82% of men report having good health or better. In Wave 2, 76% of women and 79% of men report experiencing "good health or better." In Wave 3, 74% of both men and women report having good health or better. Figure 4.4 is an illustration of the similarities in reporting of health by men and women.

Cross Sectional Analyses

For each of the three sample waves, I use gender stratified logistic regression analysis to examine the odds of the primary respondent having good health or better (compared to poor health or worse) because of violence exposure. Because researchers can measure violence in many different ways, I run separate models to measure the effects of verbal aggression, hitting or throwing objects, physical arguments, primary respondent use of violence, and primary respondent victimization. In each model, I control for the effects of age, race, education, and income. Additionally, because the NSFH does not report income in a substantial portion of the cases (8% of cases in Wave 1, 37% of cases in Wave 2, and 49% of cases in Wave 3), I include a dummy variable to control for whether the income was missing and replaced by the mean income. Primary respondents report all health outcomes, and all violence measures include violence as reported by either the primary respondent or the partner.

For these models, and for all future models in this research, I test the models and report the results of these tests as was outlined in the methods section. All model test results are found in the appendix. Additionally, the appendix includes all cross-sectional analyses coinciding with the longitudinal analyses reported in the main body of this dissertation. These model tests and cross-sectional models are placed in the appendix, as opposed to the main body of the paper, in order to keep the dissertation focus on the findings of the longitudinal analyses. Although this dissertation makes reference to cross-sectional findings, and describe them in limited detail in the main body, the tables are only located in the appendix to avoid an overabundance of tables in this chapter. While each model test includes the complete model, as is listed in regression outputs, the tables reflecting tests of model significance do not list each included variable. Instead, this research lists them by the name of the independent variable assessing violence exposure for each model. For example, in the appendix, (Table A.1), the likelihood ratio test for the model "verbal aggression" tests the "verbal aggression" model, which includes control variables of "Age, White, Years Education, Annual Income, and Income Missing - replaced mean." However, for simplicity of interpreting tables, This dissertation only lists the violence regressor for model test results.

Results of overall likelihood ratio tests of the models indicate that for both males and females who are married or cohabiting, at least one of the regression coefficients in the model is not equal to zero (prob. Chi-Squared <.0001). Results indicate that the large majority of models have well-fitting models by the standards of the Hosmer - Lemeshow goodness of fit test. However, there are several notable exceptions. Wave 1 models assessing partner violence in for males ($P<.05$), and hitting or throwing in for females

(P<.05), may not fit the data well. Overall likelihood ratio models for respondents in the full sample indicate that at least one of the regression coefficients in the model is not equal to zero (prob. Chi-Squared <.0001). Assessment indicates that each model has well-fitting models by the standards of the Hosmer- Lemeshow goodness of fit test (none is significant at the .05 level or lower. Complete model tests are reported in the appendix (Tables A.1 to A.2).

Although the focus of this dissertation is on longitudinal analysis of the data, this research also includes cross-sectional analyses of Wave 1, Wave 2, and Wave 3. These are located in the appendix (Tables A.3 to A.6). Tables A.3 to A.5 include cross-sectional results for married and cohabiting couples only. Table A.6 includes results for the full sample). Results of Wave 1 indicate that there are no significant differences in health outcomes for men or women exposed to verbal aggression compared to men or women not exposed to verbal aggression. Women exposed to hitting or throwing objects in the relationship only experience .53 odds of having good health or better compared to women not exposed to hitting or throwing objects (p<.001). There are no significant health differences for men. If arguments were physically violent, women only experienced .56 the odds of having good health or better compared to women not exposed to physically violent arguments (p< .001). There were no significant health differences for men. If women reported using physical violence, their health also suffered. Women who used physical violence in the relationship only had .56 the odds of experiencing good health or better compared to nonviolent women (p<.01). Men who used violence experienced no significant differences in physical health outcomes. When women were victims of partner physical violence, they experienced .55 the odds of good

health or better compared to women whose partners were not violent. Men who reported being victims of physical violence did not experience any significant health differences. These results indicate that there are indeed gender asymmetries in health outcomes of violence exposure. While emotional aggression did not lead to a health difference for either men or women, every other violence category was associated with significantly poorer health outcomes for women, but not for men.

In Wave 2, the health differences are not as pronounced as in Wave 1. Again, neither men nor women experience significantly worse physical health because of exposure to emotional aggression. Female (but not male) health is worse if there is hitting or throwing in the relationship (females exposed to violence experience .76 the odds of good health or better, $p<.05$). In this analysis, there were not significant differences for the other categories of violence exposure.

Wave 3 results indicate that if women reported verbal aggression, they actually had better odds of good health than if no verbal aggression was reported (OR 1.25, $p<.05$). This result does not mean that verbal aggression is "good" for your health. Rather, it is an indication of the inadequacies of measuring verbal aggression through the question used in the NSFH, which are discussed in the following chapter. In Wave 3, women experienced marginally significant ($p< .10$) health differences (OR .55) if there was hitting or throwing in the relationship. Men did not. If arguments were physical, men's health appeared to suffer (OR .41, $p<.10$), but women's health did not. There were no significant differences for using violence or being a victim of violence for either men or women in this wave.

When the full sample was assessed, results indicate that in Wave 1, women exposed to physical arguments only experienced .65 the odds of good health compared to nonviolence exposed women. There was no significant difference for men. In Wave 2, there was no significant difference in health outcomes for either men or women. In Wave 3, women exposed to violence had marginally significantly ($p<.10$) worse health (odds of good health .65 compared to nonviolence exposed women), but there were no significant differences for men.

Overall, these cross sectional results indicate that there are gender differences in the health effects of violence exposure, but a full understanding of this relationship is not possible because of the limited research questions, and because of the cross-sectional nature of the analyses. The next step is to examine the data using longitudinal panel data and random effects logistic regression models to determine if there is a relationship between poorer health and IPA when examined across time.

Longitudinal Analyses

I use panel data analysis to examine the three data waves longitudinally. In each panel data analysis, these models include all of the same control variables and violence variables as found in the cross-sectional models. In addition to the control variables included in cross-sectional analysis, this model included a variable called “wave” in to control for the effects of time at each wave. It included only the observations where a minimum of two time points were available for each variable of interest.

For both males and females who are married or cohabiting, overall likelihood ratio models indicate that at least one of the regression coefficients in the model is not equal to zero (prob. Chi-Squared <.0001). In addition to overall likelihood ratio tests, a

likelihood ratio test of RHO indicates that the panel-level variance component is significant in predicting outcomes of dependent variables in each model (P<.001). A Wald test of the model indicates that the models predict dependent variable outcomes better than chance (P<.001). Each of these findings is indicative of well-fitting models.

When assessing the full sample, results of overall likelihood ratio test, likelihood ratio of RHO tests, and Wald tests indicate a good fit for the models The significant results of the RHO likelihood ratio test indicate that the panel level data are significantly better at predicting outcomes of dependent variables in each model than is possible through cross-sectional analyses. Full results of model tests can be found in the appendix (Tables A.7 and A.8).

Table 4.11 includes the same violence variables as were listed in cross-sectional models. Table 4.12 measures violence using dummy variables. Reported violence at any wave, was coded as "1," while no report of violence was coded as "0". There are two such dummy variables: one measuring only physical violence, and one measuring verbal aggression. The reason for this is that some effects of violence may be a result of violence experienced prior to the current survey; there may be inherent health differences for individuals who have *ever* experienced IPA, not just for those currently experiencing IPA. By examining the variables as such, we can better see if the effects of violence have an acute or chronic effect on physical health because we can determine whether those effects remain over time for individuals. Table 4.11 and Table 4.12 include only married or cohabiting respondent. Table 4.13 examines violence reported by any respondent.

The results of the random effects logistic regression models examining verbal aggression indicate that both men and verbal-aggression-exposed women experience

Table 4.11
Longitudinal Analysis: Physical Health Outcomes. Good Health or Better modeled. Random Effects Logistic Regression Models – Married and Cohabiting Respondents

Physical Health Good or Better	Male (Obs.: 5308, groups:2200)				Female (Obs:6524 , groups: 2697)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	-0.27	*	0.76	0.13	-0.21	^	0.81	0.11
Age	-0.03	***	0.97	0.01	-0.01	**	0.99	0.00
White	0.02		1.02	0.17	0.54	***	1.72	0.15
Years Education	0.21	***	1.23	0.02	0.24	***	1.27	0.02
Annual Income	0.00	***	1.00	0.00	0.00		1.00	0.00
Income missing - Replaced Mean	-0.38	**	0.69	0.12	-0.39	**	0.68	0.12
Wave	-0.38	***	0.69	0.08	-0.18	*	0.83	0.08
Constant	1.38	***	3.97	0.39	-0.09		0.92	0.38
Hitting/ Throwing	-0.03		0.97	0.17	-0.52	**	0.60	0.15
Age	-0.03	***	0.97	0.01	-0.01	**	0.99	0.00
White	0.02		1.02	0.17	0.53	***	1.70	0.15
Years Education	0.21	***	1.23	0.02	0.23	***	1.26	0.02
Annual Income	0.00	***	1.00	0.00	0.00		1.00	0.00
Income missing - Replaced Mean	-0.38	**	0.68	0.12	-0.39	**	0.68	0.11
Wave	-0.37	***	0.69	0.08	-0.19	*	0.83	0.08
Constant	1.13	**	3.09	0.37	-0.07		0.93	0.37
Arguments got Physical	-0.15		0.86	0.20	-0.39	*	0.68	0.17
Age	-0.03	***	0.97	0.01	-0.01	**	0.99	0.00
White	0.02		1.02	0.17	0.53	***	1.70	0.15
Years Education	0.21	***	1.23	0.02	0.23	***	1.26	0.02
Annual Income	0.00	***	1.00	0.00	0.00		1.00	0.00
Income missing - Replaced Mean	-0.38	**	0.68	0.12	-0.40	**	0.67	0.12
Wave	-0.37	***	0.69	0.08	-0.19	*	0.83	0.08
Constant	1.16	**	3.18	0.37	-0.15		0.86	0.37
Primary Resp. used Physical Violence	0.01		1.01	0.24	-0.28		0.76	0.21
Age	-0.03	***	0.97	0.01	-0.01	**	0.99	0.00
White	0.02		1.02	0.17	0.53	***	1.70	0.15
Years Education	0.21	***	1.23	0.02	0.23	***	1.26	0.02
Annual Income	0.00	***	1.00	0.00	0.00		1.00	0.00
Income missing - Replaced Mean	-0.38	**	0.68	0.12	-0.40	**	0.67	0.12
Wave	-0.37	***	0.69	0.08	-0.19	*	0.83	0.08
Constant	1.11	**	3.04	0.37	-0.21		0.81	0.37

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.11 Continued.

Physical Health Good or Better	Male (Obs.: 5308, groups: 2200)				Female (Obs:6524 , groups: 2697)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Spouse/ Partner used Phys. Violence	0.12		1.13	0.24	-0.46	*	0.63	0.22
Age	-0.03	***	0.97	0.01	-0.01	**	0.99	0.00
White	0.02		1.02	0.17	0.53	***	1.71	0.15
Years Education	0.21	***	1.23	0.02	0.23	***	1.26	0.02
Annual Income	0.00	***	1.00	0.00	0.00		1.00	0.00
Income missing - Replaced Mean	-0.38	**	0.68	0.12	-0.40	**	0.67	0.12
Wave	-0.37	***	0.69	0.08	-0.19	*	0.83	0.08
Constant	1.09	**	2.96	0.37	-0.18		0.83	0.37

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.12
Longitudinal Analysis: Physical Health: Random Effects Logistic Regression Models. Good health or Better modeled. Married and Cohabiting Respondents.

Physical Health Good or Better	Male (Obs:3666 , groups:1379)				Female (Obs:4380 , groups:1625)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Any Physical Violence at any time in study	0.08		1.08	0.23	-0.75	**	0.47	0.22
Age	-0.02	**	0.98	0.01	-0.01		0.99	0.01
White	0.22		1.25	0.22	0.76	***	2.14	0.20
Years Education	0.18	***	1.20	0.03	0.24	***	1.27	0.03
Annual Income	0.00	***	1.00	0.00	0.00		1.00	0.00
Income missing - Replaced Mean	-0.31	*	0.73	0.14	-0.42	**	0.66	0.14
Wave	-0.41	***	0.66	0.10	-0.24	*	0.79	0.10
Constant	0.97	*	2.65	0.49	-0.44		0.64	0.55
Any Verbal Aggression at any time in study	0.35	*	1.42	0.16	0.69	***	1.99	0.16
Age	-0.02	**	0.98	0.01	0.00		1.00	0.01
White	0.17		1.19	0.22	0.74	***	2.10	0.20
Years Education	0.17	***	1.19	0.03	0.23	***	1.26	0.03
Annual Income	0.00	***	1.00	0.00	0.00		1.00	0.00
Income missing - Replaced Mean	-0.31	*	0.73	0.14	-0.43	**	0.65	0.14
Wave	-0.43	***	0.65	0.10	-0.27	**	0.76	0.09
Constant	0.92	^	2.52	0.48	-0.87		0.42	0.54

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.13
Physical Health: For All Relationship Types – Random Effects Logistic Regression Models. Modeled Outcome is Good health or Better

	Male				Female			
Physical Health Good or Better Male (obs. =6435 , groups =2675) Female (obs. = 9130, groups =3846)	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Arguments got Physical	-0.15		0.86	0.16	-0.23	*	0.80	0.11
Age	-0.03	***	0.97	0.00	-0.01	**	0.99	0.00
White	0.00		1.00	0.14	0.40	**	1.50	0.12
Years Education	0.19	***	1.21	0.02	0.24	***	1.27	0.02
Annual Income	0.00	***	1.00	0.00	0.00	*	1.00	0.00
Income missing - replaced mean	-0.35	**	0.70	0.11	-0.49	***	0.61	0.10
Current Partner	0.19		1.21	0.13	0.47	***	1.60	0.09
Wave	-0.31	***	0.74	0.07	-0.17	**	0.84	0.07
Constant	1.01	**	2.73	0.34	-0.73	*	0.48	0.31

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

lower odds of good health. For men, the odds of good health or better are .76 (see Table 4.11; p<.10), while for women they are .81 (p<.05), as compared to counterparts who did not experience verbal aggression. If there is hitting or throwing, women experience lower odds of good health (OR = .60; p<.01), but there are no significant differences for men's health outcomes. If arguments were physical, women's odds of good health or better were only .68 (p<.05) the odds of nonviolence-exposed counterparts. For men, there were no significant health differences. Neither men nor women who reported using violence reported poor health compared to those who did not use violence. However, females who were victims of male violence only experienced .63 (p<.05) the odds of good health compared to women who were not abused by a partner.

When physical violence is examined as a dummy variable (representing any physical violence at any wave), there are no significant differences for men's health. Women exposed to any physical violence experienced 63% lower odds (see Table 4.11; OR.47; p<.01) of good health than did women who were never exposed to violence in the study period. For both men and women, exposure to "verbal aggression" actually indicated *better* health (women: OR=1.99, p<.001; men: OR = 1.42, p<.05).

Table 4.13 examines the health effects of physical arguments for the full study sample. These result indicate that physical arguments lead to significantly worse health for women (OR - .80; p<.05). There are no significant differences for men. This is an indication that in previous relationships, as well as current relationships, females experience the most severe negative physical health effects of situational couple violence.

Emotional Health Outcomes

Another way to study health outcomes is through examination of emotional health. This research measures emotional health using depression and fear. Although these are not perfect measure of one's overall emotional health, they are important because depression, fear and anxiety are common effects of intimate partner abuse victimization (Campbell 2002; Campbell and Lewandowski 1997; Romito and Grassi 2007). The NSFH asked respondents how many days they felt depressed and how many days they felt fearful in the past week. Mean days depressed and fearful for respondents were very low in each wave (less than a mean of 2 for each variable in all waves). Because of this, models collapse the depression and fear variables into dummy variables with "1" representing depression or fear one or more days in the past week, and "0" representing no days of depression or fear in the past week. This research will first examine depression to see if there are gender asymmetries in depression for males and females experiencing SCV.

Depression

Univariate Analyses

In each wave of data in the study sample, women report higher mean days of depression than do men (see Table 4.14). However, it is important to note that standard deviations in each wave are higher than the actual mean depression scores. The variable measuring depression was highly skewed, indicating that a large portion of the sample did not report depression any days. Because of this, models collapse depression into a dummy variable where those who are depressed more than one day are coded "1".

Table 4.14
Univariate analyses of Depression- Reported By Primary Respondent

		Wave 1				Wave 2				Wave 3			
		Female		Male		Female		Male		Female		Male	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Depression 0 -7 days last week	Mean days depressed	1.51	1.94	1.11	1.76	1.48	1.95	1.02	1.64	1.0	1.78	.76	1.58

This research reports results of depression as a dummy variable (see Table 4.15). These results support the previous finding that more women than men report being depressed in the study sample.

Cross- Sectional Analyses

I completed cross-sectional analyses for each wave in the data set to examine gender symmetries and asymmetries in depression when controlling for age, race, education, and income. This research uses these same control variables in my previous analysis of the effects of IPA on physical health outcomes. Because the focus of this dissertation is on longitudinal analyses, the results of the cross-sectional analyses are reported here, but tables are only included in the appendix.

Results of model testing for cross-sectional models assessing depression outcomes signify that overall, the models are a good fit for the data. Likelihood ratio tests suggest that at least one of the coefficients of the regressors in each model is not equal to zero. Results of Hosmer-Lemeshow denote that the variance explained in the majority of models is significant. However, for females, verbal aggression results show that there are significant differences between observed and predicted values. Additionally in Wave 3 data, Hosmer-Lemeshow tests signify model fit problems for the physical argument model, and for the model assessing the effects of primary respondent violence on depression outcomes. Likelihood ratio test results for the full sample show that all models have at least one predictor coefficient that is not equal to zero. Additionally, Hosmer-Lemeshow goodness of fit test results suggest that the models are a good fit for the data

Table 4.15
Depression as a Dummy Variable – For Logistic Regression Analyses

	Wave 1		Wave2		Wave 3	
	Female	Male	Female	Male	Female	Male
	%	%	%	%	%	%
Depressed 1 or more days last week = 1 (dummy)	56.93	45.02	55.88	43.88	38.57	30.92

because there is not a significant difference between the observed and expected values for the models (For full model tests, please refer to Tables A.9 and A.10 in Appendix)

Results of Wave 1 indicate that married or cohabiting women who report verbal aggression have higher odds (OR 1.31, $p<.001$) of reporting depression than do women who do not experience verbal aggression. Men exposed to verbal aggression, however, do not have higher odds of reporting depression. Both men and women who experienced hitting or throwing objects (men OR = 1.29, $p<.05$; women or 1.77, $p<.001$) have higher odds of reporting being depressed one or more days. The same is true for both men and women who experience physically violent arguments, and holds true for men and women regardless of whether they are victims of physical violence or use physical violence [Results for Wave 2 and Wave 3 are substantively the same; verbal aggression leads to higher odds of depression for women, but not men]. All other measures of violence lead to higher odds of depression for both men and women. Results including the full study sample again indicate higher odds of depression for both men and women. For a full report of these cross-sectional analyses, please refer to the appendix (Tables A.11 – A.14).

Longitudinal Analyses

I completed longitudinal analyses of depression using random effects logistic regression models. In addition to the control variables included in cross-sectional analysis, models included a variable called “wave” in longitudinal models to control for the effects of time. The modeled outcome, as in cross-sectional models, is the odds of being depressed one or more days compared to the odds of depression no days.

Results of overall likelihood ratio tests indicate that in each model, at least one of the predictors has a coefficient that is not equal to zero. The Wald test results support this finding, and signify that the models including predictor variables are better than chance at predicting outcomes of the dependent variables. Additionally, likelihood ratio tests of RHO show that the panel data are better for predicting outcomes of dependent variables that data without assessment of panel level variance. These model tests are reported in full in the appendix (Table A.15 and A.16).

Table 4.16 examines the same measures of violence, with the same control variables, as are examined through cross-sectional analyses of waves one, two, and three above. Results indicate that for both men and women, exposure to verbal aggression, hitting or throwing, physically violent arguments, using violence, or being a victim of violence are associated with higher odds of experiencing one or more days of depression.

Table 4.17 assesses violence as dummy variables for married and cohabiting respondents. This enables examination of the effects of having ever been a victim of, physical violence or verbal aggression at any time in the study period. By so doing, the research will examine whether the association between depression and IPA is acute or chronic. By measuring any physical aggression at any time of the study, men do not have significantly higher odds of experiencing depression when physical violence is present in the relationship, but women do (OR 1.4, $p<.05$). These results indicate that there is no significant relationship between depression and verbal aggression for either men or women.

Results of Table 4.18 examine the full sample longitudinally to determine if there is a statistical relationship between experiencing physically violent arguments and

Table 4.16

Longitudinal Analysis of Depression: Random Effects Logistic Regression Models. Outcome Modeled "Depressed One or More days." For Married and Cohabiting Respondents.

Depressed One or More Days in Previous Week	Male (Obs.: 5419, groups:2246)				Female (Obs:6626 , groups:2740)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.45	***	1.56	0.09	0.66	***	1.94	0.08
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.04		1.05	0.12	-0.19	^	0.83	0.10
Years Education	-0.05	**	0.95	0.02	-0.08	***	0.93	0.02
Annual Income	0.00	^	1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.08		1.09	0.10	0.05		1.05	0.08
Wave	-0.07		0.93	0.06	-0.13	*	0.88	0.06
Constant	0.73	**	2.07	0.27	1.71	***	5.53	0.26
Hitting or Throwing	0.52	***	1.69	0.12	0.69	***	2.00	0.12
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.07		1.07	0.12	-0.17	^	0.84	0.10
Years Education	-0.05	**	0.95	0.02	-0.07	***	0.94	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.08		1.09	0.10	0.06		1.06	0.08
Wave	-0.07		0.93	0.06	-0.12	*	0.88	0.06
Constant	0.95	***	2.58	0.26	2.02	***	7.52	0.26
Arguments got physical	0.59	***	1.80	0.14	0.64	***	1.89	0.13
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.07		1.07	0.12	-0.17		0.85	0.10
Years Education	-0.05	**	0.95	0.02	-0.07	***	0.93	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.09		1.09	0.10	0.07		1.07	0.08
Wave	-0.07		0.94	0.06	-0.11	*	0.89	0.06
Constant	0.98	***	2.66	0.26	2.10	***	8.14	0.26
Primary Resp. physically violent	0.58	**	1.78	0.17	0.80	***	2.24	0.16
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.07		1.07	0.12	-0.17		0.84	0.10
Years Education	-0.05	**	0.95	0.02	-0.07	***	0.93	0.02
Annual Income	0.00	^	1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.09		1.09	0.10	0.06		1.07	0.08
Wave	-0.07		0.93	0.06	-0.12	*	0.89	0.06
Constant	1.02	***	2.78	0.26	2.12	***	8.30	0.26

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.16 Continued.

Depressed One or More Days in Previous Week	Male (Obs.: 5419, groups:2246)				Female (Obs:6626 , groups:2740)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Partner / Spouse physically violent	0.52	**	1.69	0.16	0.69	***	2.00	0.17
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.06		1.07	0.12	-0.18	^	0.84	0.10
Years Education	-0.05	**	0.95	0.02	-0.07	***	0.93	0.02
Annual Income	0.00	^	1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.09		1.09	0.10	0.06		1.07	0.08
Wave	-0.07		0.93	0.06	-0.12	*	0.89	0.06
Constant	1.03	***	2.80	0.26	2.15	***	8.57	0.26

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.17
Depression - Random Effects Logistic Regression Models. Modeled Outcome "Depressed One or More Days." Violence Dummy Variables. Married and Cohabiting Respondents Only.

Depressed One or More Days in Previous Week	Male (Obs:3723 , groups:1398)				Female (Obs:4444 , groups: 1649)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Any Physical violence at any time in study	0.16		1.17	0.16	0.34	*	1.40	0.15
Age	-0.03	***	0.97	0.01	-0.03	***	0.97	0.00
White	-0.11		0.90	0.15	-0.25	^	0.78	0.14
Years Education	-0.07	***	0.94	0.02	-0.06	**	0.94	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.12		1.13	0.11	0.11		1.11	0.10
Wave	-0.07		0.93	0.07	-0.15	*	0.86	0.06
Constant	1.77	***	5.87	0.35	2.41	***	11.17	0.36
Any Verbal Aggression at Any Time in Study	-0.03		0.97	0.11	-0.15		0.86	0.10
Age	-0.03	***	0.97	0.01	-0.03	***	0.97	0.00
White	-0.11		0.90	0.15	-0.25	^	0.78	0.14
Years Education	-0.07	***	0.93	0.02	-0.06	**	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.12		1.12	0.11	0.11		1.12	0.10
Wave	-0.07		0.94	0.07	-0.13	*	0.88	0.06
Constant	1.83	***	6.23	0.35	2.56	***	12.92	0.35

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.18
Depression: All Relationship Types – Random Effects Logistic Regression Models. Full Sample Included. Depressed One or More Days is Modeled Outcome.

	Male				Female			
Depressed One or More Days in Previous Week Male (obs. =6565 , groups =2729) Female (obs. 9297= , groups =3917)	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Arguments got Physical	0.62	***	1.86	0.15	0.51	***	1.66	0.09
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.12		1.13	0.10	-0.01		0.99	0.08
Years Education	-0.05	**	0.95	0.01	-0.06	***	0.94	0.01
Annual Income	0.00	*	1.00	0.00	0.00	*	1.00	0.00
Income missing - replaced mean	0.20	*	1.22	0.09	0.15	*	1.17	0.07
Current Partner	-0.71	***	0.49	0.10	-0.65	***	0.52	0.07
Wave	-0.06		0.94	0.05	-0.10	*	0.90	0.05
Constant	1.84	***	6.27	0.24	2.65	***	14.12	0.22

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

depression. These results indicate that both men and women exposed to physically violent arguments have higher odds of experiencing one or more day's depression than do nonviolence exposed respondents.

Fear

Univariate Analyses

Another way of examining health effects of violence is to examine the emotional health effect of fear or anxiety. Univariate analysis indicates that women report higher mean levels of fear than do men for each of the three waves (see Table 4.19). The standard deviation is larger than the means days reported for experiencing fear of both men and women. This is an indication that many people may experience no fear, while others experience fear that is higher than the reported mean. Because of this, the research analyzes fear as a dummy variable with "1" representing fear one or more days, and "0" representing no reported fear (see Table 4.20). These results show that 33% of women and 24% of men in Wave 1, 34% of women and 26% of men in Wave 2, and 23% of women and 16% of men in Wave 3 reported experiencing fear one or more days in the week before completing the survey.

Cross-Sectional Analyses

With each data wave, this research included a cross-sectional analysis modeling the odds of experiencing fear one or more days for those exposed and not exposed to IPA. Each of these models control for age, race, education, and income. Models use these same control variables in analysis of physical health and depression. Likelihood ratio tests show that in the logistic regression models assessing fear outcomes, for married and

Table 4.19
Univariate Analyses of Fear - Reported by Primary Respondent

	Wave 1				Wave 2				Wave 3			
	Female		Male		Female		Male		Female		Male	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Mean days fearful	.89	1.71	.63	1.5	.92	1.7	.57	1.32	.62	1.49	.48	1.4

Table 4.20
Fear as Dummy Variable: For Use in Logistic Regression Analyses

	Wave 1		Wave2		Wave 3	
	Female	Male	Female	Male	Female	Male
	%	%	%	%	%	%
Fearful 1 or more days (dummy)	32.82	24.37	34.47	26.13	23.57	16.33

cohabiting respondents, at least one of the predictor variable coefficients is not equal to zero in each model. Hosmer-Lemeshow tests signify well-fitting models for the majority of these models. However, in Wave 2, there are several models where results of this test indicate that the model is not a good fit. Notably, for males who have physically violent partners, and for females who use violence or have physically violent partners, the standard was not met for this goodness of fit test. Model testing for cross-sectional fear models using the full sample and likelihood ratio test indicates that for both males and females, at least one of the predictor coefficients is not equal to zero. Additional tests using Hosmer-Lemeshow Goodness of Fit indicate that there is not a significant difference between observed and predicted models, and thus the models fit the data well. Full reports of these model tests are located in the appendix (Tables A.17 to A.18).

Cross-sectional results of examining married and cohabiting couples in Wave 1 indicate that there are gender asymmetries in fear of married or cohabiting men and women exposed to IPA. Women exposed to verbal aggression have higher odds of experiencing fear than are women not exposed to verbal aggression (OR = 1.21, $p<.05$). There is no significant relationship between verbal aggression and experiencing fear for men. If there is hitting or throwing objects in a relationship, females have significantly higher odds (OR = 1.54, $p<.001$) of experiencing fear. There is not a significant relationship between fear and hitting or throwing objects for men in Wave 1. If arguments are physically violent, both men (OR = 1.34, $p<.05$) and women (OR = 1.54, $p<.001$) experience higher odds of fear than do their counterparts in nonviolent relationships. The same holds true for men (OR = 1.37, $p<.10$) and women (OR = 1.84, $p<.001$) who use violence in relationships. An important finding is that being the victim

of a partner's physical violence does not lead to increased odds of fear for men. However, it does lead to increased fear for women; women who were physically abused by a partner had 73% ($p<.001$) higher odds of experiencing fear than did women who were not victims of intimate partner abuse.

Results for Wave 2 show that for married and cohabiting respondents, both men and women have greater odds of experiencing fear for some types of violence exposure, but that women have significantly greater odds of experience fear within more violence categories than men do. Both men (OR 1.32, $p<.10$) and women (OR 1.17, $p<.10$) have marginally significant higher odds of experiencing fear when emotional abuse is present in the relationship. Both men (OR 2.74, $p<.01$) and women (OR 1.81, $p<.001$) have higher odds of experiencing fear if there is hitting or throwing objects in the relationship. Both men (OR= 2.75, $p<.05$) and women (OR 2.10, $p<.001$) have higher odds of experiencing fear if arguments are physically violent compared to counterparts on nonviolent relationships. However when we examine the use of violence, women are 2.5 times more likely to experience fear if they use violence compared to women who did not report using violence in a relationship ($p<.001$). There are no significant differences in fear for me who do or do not use violence. Both men (OR = 3.92, $p<.05$) and women (OR = 2.5, $p<.001$) who are victims of partner violence have higher odds of reporting fear than do their counterparts who are not abused by partners.

Results for Wave 3 indicate that for married and cohabiting respondents, men experience marginally significantly higher odds of fear when exposed to verbal aggression (OR = 1.32, $p<.10$). There are no differences in fear reported for women experiencing emotional aggression in this wave. Mirroring the findings of Wave 2, both

men and women who experience hitting or throwing, physically violent arguments, and abuse by a partner, have significantly higher odds of experiencing fear than non-abuse-exposed counterparts. Additionally, just as in Wave 2, women who use violence have significantly higher levels of fear than women who do not use violence (OR = 3.16, p< .01). It is notable that the odds a woman who uses violence will experience fear is three times higher than a nonviolent woman's odds of experiencing fear. It is especially remarkable when considering that there are no significant differences for men. This research will address this finding in the discussion portion of this dissertation. A full report of these findings is located in the appendix (Tables A.19 to A.21).

In the data analyses, the odds of experiencing fear for those exposed to physically violent arguments compared to individuals not exposed to physically violent arguments are also assessed cross-sectionally for the full study sample. Results indicate that both men and women have higher odds of experiencing fear when exposed to physically violent arguments with a partner compared to counterparts not exposed to this violence. A full report of this analysis is located in the appendix (Table A.22).

Longitudinal Analyses

I completed longitudinal analysis of married and cohabiting respondents using all of the same control variables as corresponding cross-sectional analyses. In addition to the control variables included in cross-sectional analysis, the model included a variable called "wave" in longitudinal models to control for the effects of time.

Model tests for random effects regression using panel model assessing fear of married and cohabiting respondents indicate that in each model, at least one of the predictor coefficients is not equal to zero, and that the panel level variance explained by

RHO is significant in predicting dependent variable outcomes. Additionally, a Wald test of each model indicates that each of the models predicts the dependent variable better than chance. These combined results indicate that the models are sufficient for predicting the dependent variable. When testing models with overall likelihood ratio tests, likelihood ratio test of RHO, or Wald tests, the model is sufficient for predicting outcomes in the dependent variable. A full report of these model tests are located in the appendix (Tables A.23 and A.24).

Longitudinal analyses of married and cohabiting respondents in the sample, using random effects logistic regression models indicate that both men and women have significantly higher odds of experiencing fear when exposed to every measure of violence addressed through cross sectional analysis (see Table 4.21). However, as with physical health and depression outcomes, this research also includes models with dummy variable measures to examine exposure to any physical violence, or any verbal aggression at any time in the study.

Results of random effects models examining these effects of *any* violence exposure indicate that only violence-exposed females in the sample are significantly more likely to experience fear. This is true whether the violence was physical or emotional aggression (see Table 4.22). There were no significant differences for men.

When all relationship types (except widows who are excluded from the entire sample) are examined, both men and women have significantly higher odds of experiencing fear if they are exposed to physically violent arguments when compared to counterparts who are not exposed to violent arguments (see Table 4.23).

Table 4.21
Longitudinal Analysis of Odds of Fear with Violence Exposure -Married and Cohabiting Respondents. Outcome Modeled Is Odds of Experiencing Fear One or More Days. Random Effects Logistic Regression

Fear One or More Days in Previous Week	Male (Obs:5398 , groups:2235)				Female (Obs:6602 , groups:2729)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.36	**	1.43	0.11	0.53	***	1.70	0.09
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.42	**	0.66	0.12	-0.54	***	0.58	0.11
Years Education	-0.06	**	0.95	0.02	-0.06	**	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.19	^	1.21	0.11	0.23	*	1.25	0.09
Wave	-0.01		0.99	0.07	-0.01		0.99	0.06
Constant	0.00		1.00	0.30	0.20		1.22	0.28
Hitting or Throwing	0.45	**	1.57	0.13	0.73	***	2.07	0.12
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.40	**	0.67	0.12	-0.52	***	0.59	0.11
Years Education	-0.05	**	0.95	0.02	-0.04	**	0.96	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.19	^	1.21	0.11	0.23	*	1.26	0.09
Wave	-0.01		0.99	0.07	-0.01		0.99	0.06
Constant	0.15		1.16	0.28	0.35		1.42	0.27
Arguments got physical	0.52	***	1.69	0.15	0.83	***	2.30	0.13
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.40	**	0.67	0.12	-0.52	***	0.60	0.11
Years Education	-0.05	**	0.95	0.02	-0.05	**	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.20	^	1.22	0.11	0.24	**	1.27	0.09
Wave	-0.01		0.99	0.07	0.00		1.00	0.06
Constant	0.17		1.19	0.28	0.40		1.50	0.27
Primary Resp. physically violent	0.46	**	1.59	0.18	1.01	***	2.75	0.15
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.40	**	0.67	0.12	-0.52	***	0.60	0.11
Years Education	-0.05	**	0.95	0.02	-0.05	**	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.20	^	1.22	0.11	0.24	**	1.27	0.09
Wave	-0.01		0.99	0.07	-0.01		0.99	0.06
Constant	0.22		1.25	0.28	0.42		1.53	0.27

Table 4.21 Continued.

Fear One or More Days in Previous Week	Male (Obs:5398 , groups:2235)				Female (Obs:6602 , groups:2729)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Partner / Spouse physically violent	0.45	**	1.57	0.17	0.85	***	2.34	0.16
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.40	**	0.67	0.12	-0.53	***	0.59	0.11
Years Education	-0.05	**	0.95	0.02	-0.05	**	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.20	^	1.22	0.11	0.24	**	1.27	0.09
Wave	-0.01		0.99	0.07	-0.01		0.99	0.06
Constant	0.22		1.24	0.28	0.47	^	1.61	0.27

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.22
Longitudinal Analysis of Odds of Fear with Violence Exposure . Married Respondents and Cohabiting Respondents. Outcome Modeled Is Odds of Experiencing Fear One or More Days. Dummy- Variable Measures of Any Violence in Three Waves.

Fear One or More Days in Previous Week	Male (Obs:3718 , groups:1395)				Female (Obs.: 4438, groups:1649)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Any Physical violence at any time in study	0.22		1.25	0.18	0.58	***	1.79	0.16
Age	-0.02	**	0.98	0.01	-0.02	**	0.98	0.01
White	-0.60	***	0.55	0.17	-0.70	***	0.50	0.14
Years Education	-0.08	***	0.92	0.02	-0.05	*	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.26	*	1.30	0.13	0.18		1.20	0.11
Wave	-0.06		0.94	0.08	-0.07		0.93	0.07
Constant	0.76	^	2.15	0.40	0.66	^	1.93	0.39
Any Verbal Aggression at Any Time in Study	-0.09		0.92	0.13	-0.32	**	0.72	0.11
Age	-0.02	**	0.98	0.01	-0.02	**	0.98	0.01
White	-0.59	***	0.55	0.17	-0.70	***	0.50	0.14
Years Education	-0.08	***	0.92	0.02	-0.05	*	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.26	*	1.29	0.13	0.18	^	1.20	0.11
Wave	-0.05		0.95	0.08	-0.04		0.96	0.07
Constant	0.85	*	2.35	0.39	0.92	*	2.50	0.38

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.23
Longitudinal Analysis of Odds of Fear with Violence Exposure - Full Sample Included. Outcome Modeled Is "Odds of Experiencing Fear One or More Days. Dummy- Variable Measures of Any Violence in Three Waves.

	Male (obs. = 6459, groups =2720)				Female (obs. =9269 , groups =3902)			
Fear One or More Days in Previous Week	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Arguments got Physical	0.44	***	1.56	0.12	0.58	***	1.78	0.09
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.34	**	0.71	0.11	-0.37	***	0.69	0.08
Years Education	-0.05	**	0.95	0.02	-0.04	**	0.96	0.01
Annual Income	0.00	^	1.00	0.00	0.00	^	1.00	0.00
Income missing - replaced mean	0.23	*	1.26	0.10	0.35	***	1.42	0.08
Current Partner	-0.29	**	0.75	0.11	-0.66	***	0.52	0.07
Wave	0.07		1.07	0.06	0.01		1.01	0.05
Constant	0.42		1.52	0.27	0.84	***	2.31	0.22

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Conclusions: Research Question Three

Results indicate that situational couple violence is not gender symmetrical in health outcomes. Although there was some evidence for negative physical health effects, depression, and fear for both males and females, there were more models indicating significant health disadvantages for females in all three sets of analyses. Females exposed to IPA were significantly likely to suffer worse physical health in more models than males. Females exposed to IPA were significantly likely to suffer depression in more models than males, and females exposed to IPA were significantly likely to suffer fear in more models than males. These results held true in cross-sectional and longitudinal models.

Research Question Four: Are Gender Symmetries or Asymmetries in Social Factor Outcomes that Effect Health?

In addition to asymmetries in health outcomes that result from IPA, abuse can lead to asymmetries in social factors that affect health. Previous research indicates that IPA leads to increased stress, increased isolation (or decreased social support and social connectedness), and decreased access to resources (Pico-Alfonso et al. 2004), which can all contribute to poor health outcomes. This section will examine whether stress, resources, and social connectedness or isolation are symmetrically affected for males and females exposed to violence. If these outcomes are asymmetrical, this would indicate that victims of IPA could experience a sort of "double jeopardy" from being exposed to both injuries that lead to poor health, and to decreased resources, and social support, with increased stress, which also lead to poor health. This section first examines stress, then social connectedness and isolation, and finally access to resources.

Stress Outcomes

Univariate Analyses

The NSFH asked several questions relating to stress in families. If respondents answered that their spouse or family was stressful, the response is coded "1". If they responded that the family or spouse was not stressful, the response is coded as "0." In Wave 1, just over 8.6% of females and just over 9.6% of males responded that the home or spouse was stressful (see Table 4.24). By Wave 2, 16.6% of men and 24.5% of women reported experiencing stress at home. As there are differences in stress by gender, cross-sectional and longitudinal models are stratified by gender.

Table 4.24
Stress[4] Reported By Primary Respondent

	Wave 1				Wave 2			
	F (%)	F (N)	M (%)	M (N)	F (%)	F (N)	M (%)	M (N)
Home or family is stressful	8.64	330	9.61	254	24.55	961	16.59	454

[4] There is no variable to measure stress in Wave 3 of the NSFH.

Cross- Sectional Analysis

In each cross-sectional analysis, models use logistic regression models to assess the odds of experiencing stress compared to the odds of not experiencing stress because of intimate partner abuse. Each of the models controls for age, race, education, and income as was done in previous models.

Test of logistic regression models for stress of married and cohabiting respondents indicate mixed results. For overall likelihood ratio tests, tests indicate that each model has at least one predictor that has a nonzero coefficient. However, Hosmer-Lemeshow goodness of fit tests signify that for several models in Wave 1 and Wave 2 modeling male outcomes, the criteria of the goodness of fit test were not met. This is a caution that there may be differences between observed values and model-predicted values, and so several models measuring the effects of IPA on stress for males may not be the best models. However, one shortcoming of the Hosmer-Lemeshow (HL) test is that as samples get large, the HL statistic may find smaller differences between the expected and observed outcomes to be significant(Garson 2010a). With this in mind, and considering the large sample size at hand, this research will include the analyses and examine the model outcomes. For model testing of females, all results indicate a good fit of models. Model testing for full models using likelihood ratio test indicates that at least one predictor has a nonzero coefficient. The Hosmer-Lemeshow Goodness of fit test results indicate that each model is well fitting because there is no indication of significant differences between observed values and model-predicted values in the models assessed. A complete result of these model tests is found in the appendix (Tables A.25 and A.26).

Cross-sectional results of married and cohabiting respondents were assessed for each wave. Results for Wave 1 indicate that males experience increased odds of house stress with verbal aggression (OR = 1.27; p<.10), females actually experience *decreased* risk of stress in the home if there is verbal aggression. In Wave 1, increased odds of household stress was not associated with hitting or throwing objects, physically violent arguments, violence use, or being the victim of partner violence.

Results of Wave 2 indicate that verbal aggression does not produce significantly higher odds of experiencing stress for either men or women. However, hitting or throwing objects leads to increased odds of stress for both men (OR = 1.38, p<.05) and for women (OR = 1.36, p<.05). For other measures of violence, women experience increased stress, but men do not. For physically violent arguments, women have 57% higher odds (p<.01) of experiencing stress compared to female counterparts in nonviolent relationships. If women use violence, they experience 78% higher odds of stress (p<.001) than women who do not use violence in relationships. Female victims of partner violence experience 66% higher odds of stress than did nonphysically abused females.

When models include the full sample, rather than limiting analysis to only married or cohabiting couples, results of both Wave 1 and Wave 2 indicate that men do not experience increased odds of stress with exposure to physically violent arguments. However, in both waves, women (Wave 1: OR = 1.37, p<.05; Wave 2: OR = 1.36, p<.01) experience increased odds of stress with exposure to physically violent arguments. A full report of these cross-sectional analyses are located in the appendix (Tables A.27 – A.29).

Longitudinal Analysis

I use longitudinal analysis and random effects regression models to examine the odds of experiencing stress from intimate partner abuse. Model testing of random effects logistic regression models measuring stress outcomes indicate that while all models are significant for likelihood ratio tests and Wald test, prediction of stress for males is not significantly improved by including panel level analysis. Combining this result with the cross-sectional model test results that indicated male stress was not well fit in models using the Hosmer-Lemeshow goodness of fit test; researchers should interpret results of male stress with the understanding that the model fit was less than adequate to predict dependent variable outcomes. Tests of models including the full sample indicate that overall likelihood ratio tests and Wald tests are significant for both males and females. However, the panel level variance is not significant in predicting stress for females. A full report of model tests is located in the appendix (Tables A.30 and A.31).

The results in Table 4.25 are for married and cohabiting respondents only. The results in Table 4.26 include analysis of the full sample. The outcome modeled is the odds of experiencing stress compared to the odds of not experiencing stress because of IPA exposure. Each model controls for age, race, education, income, and wave as do each of the cross-sectional models.

Results indicate that men show marginally significant increased odds of stress (OR 1.26, $p<.10$) with emotional aggression, but women do not. However, for every other measure of violence, women show significantly increased odds of stress with violence exposure, but men do not. Women who experience hitting or throwing (OR 1.35, $p<.05$), physically violent arguments (OR = 1.43, $p<.05$), use violence against a

Table 4.25
Longitudinal Analysis of Stress - Married and Cohabiting Respondents. Random Effects Logistic Regression Models. Outcome Modeled Is "Odds of Experiencing Stress."

House Stress	Male (Obs.: 3882, groups: 1941)				Female (Obs.: 4640 , groups: 2320)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.23	^	1.26	0.13	0.00		1.00	0.11
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.35	**	0.71	0.12	0.07		1.07	0.12
Years Education	-0.08	***	0.93	0.02	-0.14	***	0.87	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.06		1.06	0.13	-0.12		0.88	0.11
Wave	0.56	***	1.76	0.11	1.50	***	4.48	0.11
Constant	-1.80	***	0.17	0.34	-2.47	***	0.08	0.33
Hitting or Throwing	0.03		1.03	0.15	0.30	*	1.35	0.14
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.34	**	0.71	0.12	0.08		1.08	0.12
Years Education	-0.07	***	0.93	0.02	-0.14	***	0.87	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.06		1.06	0.13	-0.12		0.88	0.11
Wave	0.57	***	1.77	0.11	1.50	***	4.47	0.11
Constant	-1.61	***	0.20	0.33	-2.59	***	0.07	0.33
Arguments got physical	-0.14		0.87	0.19	0.36	*	1.43	0.16
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.34	**	0.71	0.12	0.08		1.09	0.12
Years Education	-0.07	***	0.93	0.02	-0.14	***	0.87	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.06		1.06	0.13	-0.12		0.89	0.11
Wave	0.57	***	1.77	0.11	1.51	***	4.52	0.11
Constant	-1.56	***	0.21	0.33	-2.58	***	0.08	0.33

Table 4.25 Continued.

	Male (Obs.: 3882, groups: 1941)				Female (Obs.: 4640 , groups: 2320)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Primary Resp. physically violent	-0.22		0.80	0.23	0.39	*	1.48	0.18
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.35	**	0.71	0.12	0.08		1.09	0.12
Years Education	-0.07	***	0.93	0.02	-0.14	***	0.87	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.06		1.06	0.13	-0.12		0.89	0.11
Wave	0.57	***	1.77	0.11	1.50	***	4.49	0.11
Constant	-1.55	***	0.21	0.33	-2.55	***	0.08	0.32
Partner / Spouse physically violent	-0.20		0.82	0.21	0.35	^	1.43	0.19
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.40	**	0.67	0.12	0.08		1.08	0.12
Years Education	-0.07	***	0.93	0.02	-0.14	***	0.87	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.06		1.06	0.13	-0.12		0.89	0.11
Wave	0.59	***	1.81	0.10	1.50	***	4.49	0.11
Constant	-1.52	***	0.22	0.32	-2.54	***	0.08	0.32

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.26
Longitudinal Analysis of Stress: Full Sample Included. Random Effects Logistic Regression Models. Outcome modeled Is "Odds of Experiencing Stress"

	Male (obs. =5110 , groups =2555)				Female (obs. =7360 , groups =3680)			
House Stress	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Arguments got Physical	-0.01		0.99	0.14	0.36	***	1.44	0.10
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.25	*	0.78	0.10	0.04		1.04	0.08
Years Education	-0.08	***	0.92	0.02	-0.12	***	0.89	0.01
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.10		1.11	0.11	0.03		1.03	0.09
Current Partner	-0.10		0.91	0.11	-0.24	**	0.79	0.08
Wave	0.66	***	1.93	0.09	1.43	***	4.19	0.09
Constant	-1.57	***	0.21	0.30	-2.26	***	0.10	0.26

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

partner (OR = 1.48, p<.05), or who are physically abuse by a partner (OR = 1.43, p<.05) each have higher odds of stress than do women who do not experience the violence.

When analysis includes respondents from the full sample using random effects logistic regression models, results indicate that women experience significantly higher odds of stress if there are physically violent arguments, (see Table 4.26; OR = 1.44, p<.001), but men do not.

Social Connectedness and Isolation Outcomes

Intimate partner abuse is associated with decreased social connectedness, and increased isolation. Decreased social connectedness has been associated with poor health outcomes. This section will assess whether or not there are gender differences in social connectedness or isolation that result from intimate partner abuse. For complete details on the construction of this index variable, please refer to the methods section of this dissertation.

Univariate Analyses

The measure of social connectedness has a normal distribution within the study sample (see Figure 4.5). Univariate analyses indicate that overall, males experience higher social contact than do females. In Wave 1, the females had a mean social connectedness score of almost 15, while males score was just over 15. In Wave 2, females scored a mean of almost 13, while males scored just over 14 in social connectedness. In Wave 3, female score was about 12.5, while male mean score was about 13.5 (see Table 4.27). However, when male and female social connectedness is examined in a box-plot (see Figure 4.6), it appears that there are outliers for both male

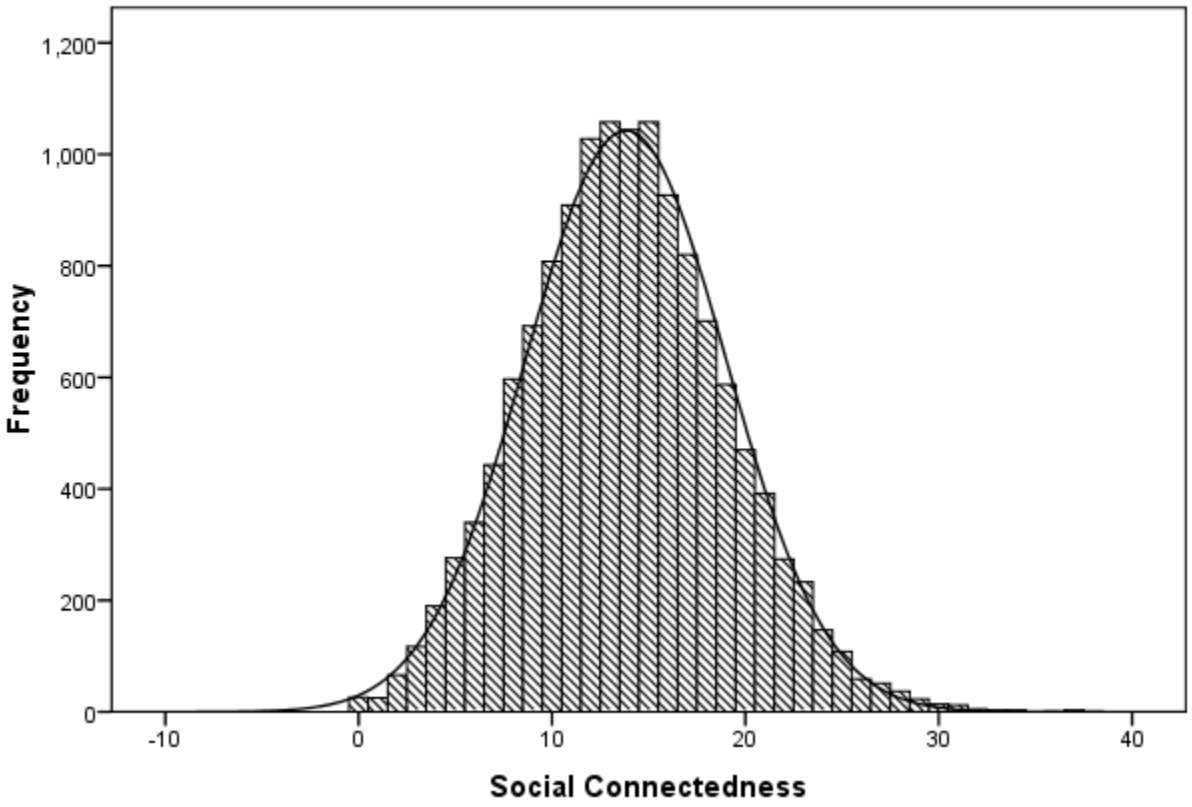

Figure 4. 5: Distribution of social connectedness

Table 4.27
Social Connectedness or Isolation,

		Wave 1				Wave 2				Wave 3			
		Female		Male		Female		Male		Female		Male	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Mean Social Contact Score	Social Contact Index Score	14.89	4.46	15.31	4.86	12.71	5.57	14.23	5.84	12.52	5.29	13.45	5.41

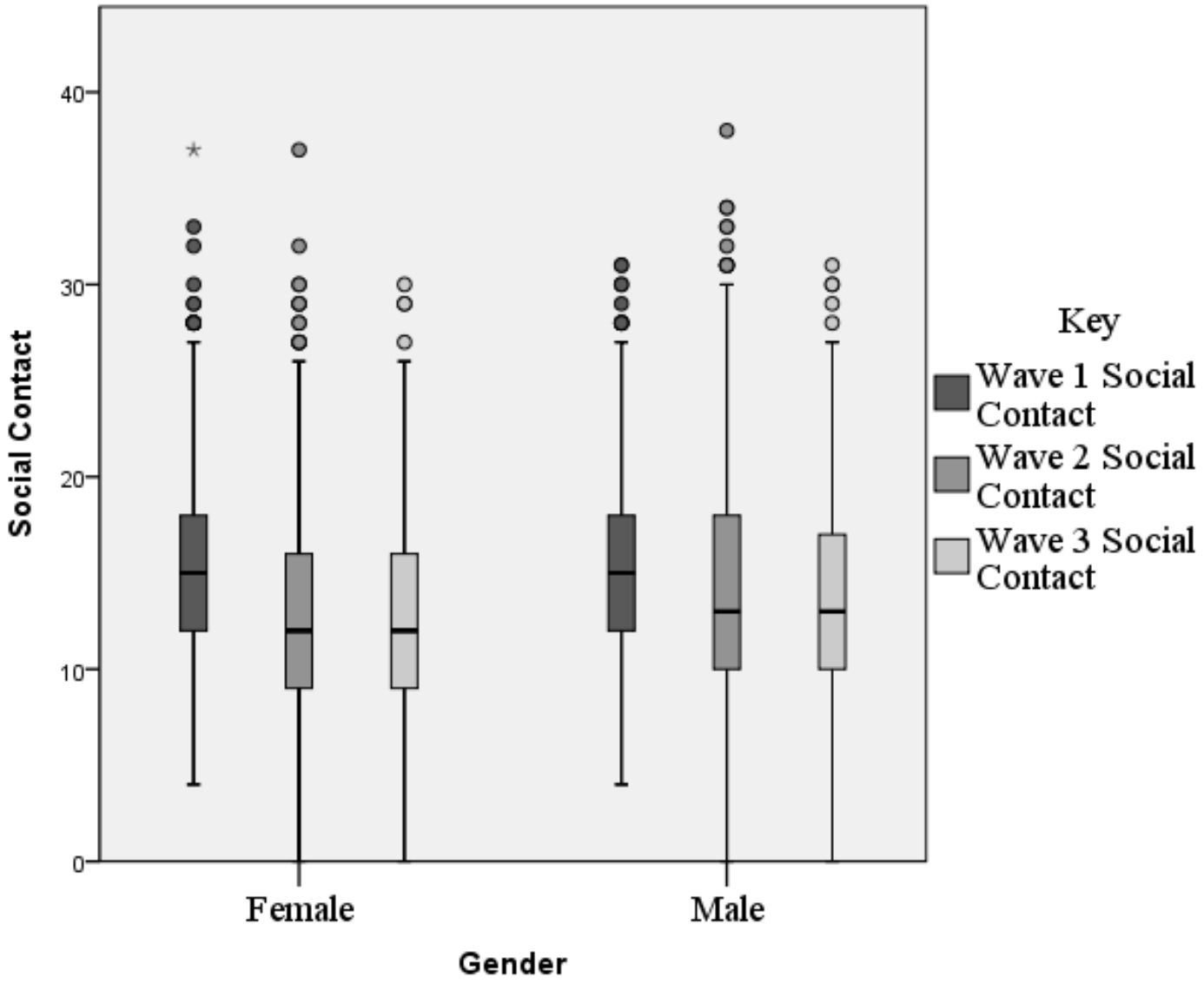

Figure 4. 6 : Social connectedness stratified by gender

and female social connectedness, but that there are not large differences in overall social connectedness by gender.

Cross Sectional Analyses

Cross-sectional analyses were completed assessing social connectedness and violence. Because the dependent variable, social connectedness, is a count variable, Poisson regression was considered for assessing the outcomes of this measure. However, test of dispersion indicated that the models were over-dispersed. Models using negative binomial regression were assessed to account for the overdispersion, but several models were "not concave." In the end, linear regression seemed to be the best fit for the models. Similar to other models in this dissertation, each cross-sectional model controls for age, education, race, and income.

F-tests for linear regressions modeling the effects of violence on social connectedness (for married and cohabiting respondents) indicate that the models are better at predicting the dependent variable than would be expected by chance. This is an indication that these models are sufficient for measuring the linear effects of violence on social connectedness. Models are also tested using the full research sample. Results indicate the model better predicts that social connectedness than would be expected by chance. A full report of these model tests are located in the appendix (Tables A.32 and A.33).

Results of the cross-sectional analysis of married and cohabiting couples in Wave 1 indicate that when there is verbal aggression in a relationship, married or cohabiting men experience significantly lower levels of social connectedness ($P<.01$). Married or cohabiting women experiencing verbal aggression also have lower levels of social

connectedness than women not experiencing verbal aggression, but the results are only marginally significant (P<.10). For every other measure of physical abuse, both men and women experience lower levels of social connectedness if there is violence present.

Results from married and cohabiting couples in Wave 2 indicate decreased social connectedness for married or cohabiting men or women when there is verbal aggression in the relationship (P<.05). In this wave, there is no relationship between hitting or throwing object and social connectedness. However, if someone in the couple reports physically violent arguments, or if respondents use physical violence, females experience significantly lower social connectedness than nonviolence exposed females. There is no significant relationship for these measures of violence and males. If the respondent is a victim of partner violence, female respondents experience marginally significant lower social connectedness, but there is no relationship between being a victim of partner violence and social connectedness for men in this wave.

Cross-sectional analysis of married and cohabiting couples in Wave 3 indicates that men who report that there is hitting or throwing objects in the relationship experience marginally higher social connectedness (P<.10), but there are no other models that indicate a significant relationship between abuse and social connectedness in this data wave.

For models including the full data sample, there is not a significant relationship between social connectedness and physically violent arguments in any wave of the data. A complete report of the cross-sectional analyses is located in the appendix (Tables A.35 to A.37).

Longitudinal Analyses

The longitudinal analysis includes the same control variables as the cross-sectional models, with the added variable of "wave" to control for effects of time in the model. Just as in the cross-sectional models, these models use linear regression to analyze the effects of intimate partner abuse on social connectedness.

When panel data models using random effects models to predict the effects of violence on social connectedness are tested using an overall Wald test, results indicate that all models have at least one regressor with a non-zero coefficient

Models of the full sample results show significant Wald tests, indicating that models have non-zero coefficients. This is an indication that researchers can use the model to predict social connectedness. The complete results of these model tests are found in the appendix (Tables A.38 and A.39).

Longitudinal analysis of social connectedness as it relates to partner abuse, using panel data for married and cohabiting respondents results are in Table 4.28 and results for the full sample are in Table 4.29.

Results of the longitudinal analysis (see Table 4.28) for married and cohabiting couples show that for women who experience physically violent arguments, or for women who are reported to use physical violence, there is a significant decrease in level of social connectedness. There is no relationship between abuse and social connectedness for married and cohabiting men in the longitudinal analysis.

Results of random effects linear regression models assessing violence in dummy variables for exposure to violence in any wave (see Table 4.29) indicate that there is no

Table 4.28
Longitudinal Analysis: For Married and Cohabiting Respondents. Social Connectedness & Isolation - : Random Effects Linear Regression Models

Social Connectedness and Isolation	Male (Obs:4082 , groups:1752)			Female (Obs:4586 , groups:1979)		
	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Verbal Aggression	-0.13		0.20	-0.08		0.17
Age	-0.05	***	0.01	-0.03	**	0.01
White	-0.93	**	0.32	-0.43		0.28
Years Education	0.30	***	0.04	0.30	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income missing - replaced mean	-0.06		0.21	-0.43	*	0.19
Wave	-0.50	***	0.11	-1.12	***	0.11
Constant	14.16	***	0.66	13.05	***	0.68
Hitting or Throwing	0.03		0.25	-0.26		0.23
Age	-0.05	***	0.01	-0.03	**	0.01
White	-0.93	**	0.32	-0.44		0.28
Years Education	0.30	***	0.04	0.30	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income missing - replaced mean	-0.07		0.21	-0.43	*	0.19
Wave	-0.50	***	0.11	-1.12	***	0.11
Constant	14.01	***	0.64	13.07	***	0.67
Arguments got physical	0.12		0.30	-0.53	*	0.23
Age	-0.05	***	0.01	-0.03	**	0.01
White	-0.93	**	0.32	-0.45		0.28
Years Education	0.30	***	0.04	0.30	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income missing - replaced mean	-0.07		0.21	-0.43	*	0.19
Wave	-0.50	***	0.11	-1.13	***	0.11
Constant	13.99	***	0.64	13.12	***	0.67
Primary Resp. physically violent	0.43		0.36	-0.75	**	0.27
Age	-0.05	***	0.01	-0.03	**	0.01
White	-0.92	**	0.32	-0.44		0.28
Years Education	0.30	***	0.04	0.30	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income missing - replaced mean	-0.06		0.21	-0.43	*	0.19
Wave	-0.50	***	0.11	-1.12	***	0.11
Constant	13.92	***	0.64	13.11	***	0.67

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.28 Continued.

Social Connectedness and Isolation	Male (Obs:4082 , groups:1752)			Female (Obs:4586 , groups:1979)		
	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Partner / Spouse physically violent	0.22		0.35	-0.37		0.28
Age	-0.05	***	0.01	-0.03	**	0.01
White	-0.93	**	0.32	-0.43		0.28
Years Education	0.30	***	0.04	0.30	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income missing - replaced mean	-0.06		0.21	-0.43	*	0.19
Wave	-0.50	***	0.11	-1.13	***	0.11
Constant	13.96	***	0.64	13.04	***	0.67

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4. 29
Longitudinal Analysis: For Married and Cohabiting Respondents.
Social Connectedness and Isolation. Random Effects
Linear Regression Models

Social Connectedness and Isolation	Male (Obs:2818 , groups: 1120) Coef.	p<|Z|	SE	Female (Obs:3128, groups:1250) Coef.	p<|Z|	SE
Any Physical violence at any time in study	0.41		0.36	-0.12		0.34
Age	-0.03	^	0.01	-0.01		0.01
White	-1.11	*	0.44	-0.92	**	0.35
Years Education	0.31	***	0.04	0.31	***	0.05
Annual Income	0.00		0.00	0.00		0.00
Income missing - replaced mean	-0.01		0.24	-0.30		0.21
Wave	-0.55	***	0.14	-0.96	***	0.13
Constant	12.67	***	0.85	12.37	***	0.84
Any Verbal Aggression at Any Time in Study	0.33		0.26	0.34		0.23
Age	-0.03	^	0.01	-0.01		0.01
White	-1.17	**	0.44	-0.92	**	0.35
Years Education	0.30	***	0.04	0.31	***	0.05
Annual Income	0.00		0.00	0.00		0.00
Income missing - replaced mean	-0.01		0.24	-0.30		0.21
Wave	-0.54	***	0.14	-0.97	***	0.13
Constant	12.71	***	0.85	12.19	***	0.84

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

significant relationships between social connectedness and any physical violence as a dummy variable, or any verbal aggression as a dummy variable, in the study sample.

Table 4.30 assesses the relationship between social connectedness and violence for the full sample. Results indicate that women who are exposed to physically violent arguments experience higher odds of reporting fear ($P<.05$) than do women not exposed to physically violent arguments. There are no significant differences with violence exposure for men. Overall, these results indicate that there is no relationship between physical violence exposure and social connectedness for men, but women who experience physical violence in relationships report lower levels of social connectedness than nonviolence-exposed women do.

Resources

Just as increased stress and decreased social connectedness have been associated with poor health outcomes, access to resources can also have an influence on health. Increased access to resources can mean better health, while decreased access to resources can lead to poor health outcomes. This section will assess the relationship between resources and intimate partner abuse to determine if there are gender asymmetries in resource allocation for respondents experiencing SCV.

I use two variables to assess resource allocation in the data. First, this research will assess income. Then, it will assess fairness of spending money in the relationship.

Table 4.30
Longitudinal Analysis: Full Sample Included. Social Connectedness and Isolation: Random Effects Linear Regression Models

	Male (obs. =4917, groups =2103)			Female (obs. =6491 , groups = 2829)		
Social Connectedness and Isolation : Random Effects Linear Regression Model	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Arguments got Physical	0.18		0.27	-0.46	*	0.20
Age	-0.05	***	0.01	-0.03	**	0.01
White	-0.97	**	0.32	-0.39		0.28
Years Education	0.30	***	0.04	0.30	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income missing - replaced mean	0.03		0.21	-0.42	*	0.19
Current Partner	-1.42	***	0.38	-1.27	***	0.29
Wave	-0.48	***	0.11	-1.10	***	0.11
Constant	15.45	***	0.73	14.37	***	0.73

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Income Outcomes

Univariate Analyses

Table 4.3 includes univariate analyses of income and indicates that women earn substantially less money annually than men in the study sample do. This information is displayed in bar charts in Figure 4.7, which illustrates gender differences in income, and shows that the distribution of income is skewed. In cross-sectional and longitudinal examination of the effects of IPA on income, this research stratifies the sample by gender to account for income differences. These models include each of the same control variables as previous models, with the exception that income is not included as a control in the model because it is the dependent variable. This research uses linear regression models in cross-sectional analyses, and random effects linear regression models in longitudinal analyses.

Cross-sectional Analyses

Model testing of cross-sectional analyses of income indicate that cross-sectional models using violence and other control variables to predict income for married and cohabiting partners have nonzero coefficients. This indicates that these models are appropriate to predict income. Results for the full sample are substantively the same; all result of F-tests are significant for these models as well. Full model tests are found in the appendix (Tables A.40 and A.41).

Results for Wave 1 indicate that men who report "verbal aggression" in the relationship are expected to earn about $6,029 ($p<.001$) more annually than their counterparts in non-verbally aggressive relationships. Women who report experiencing

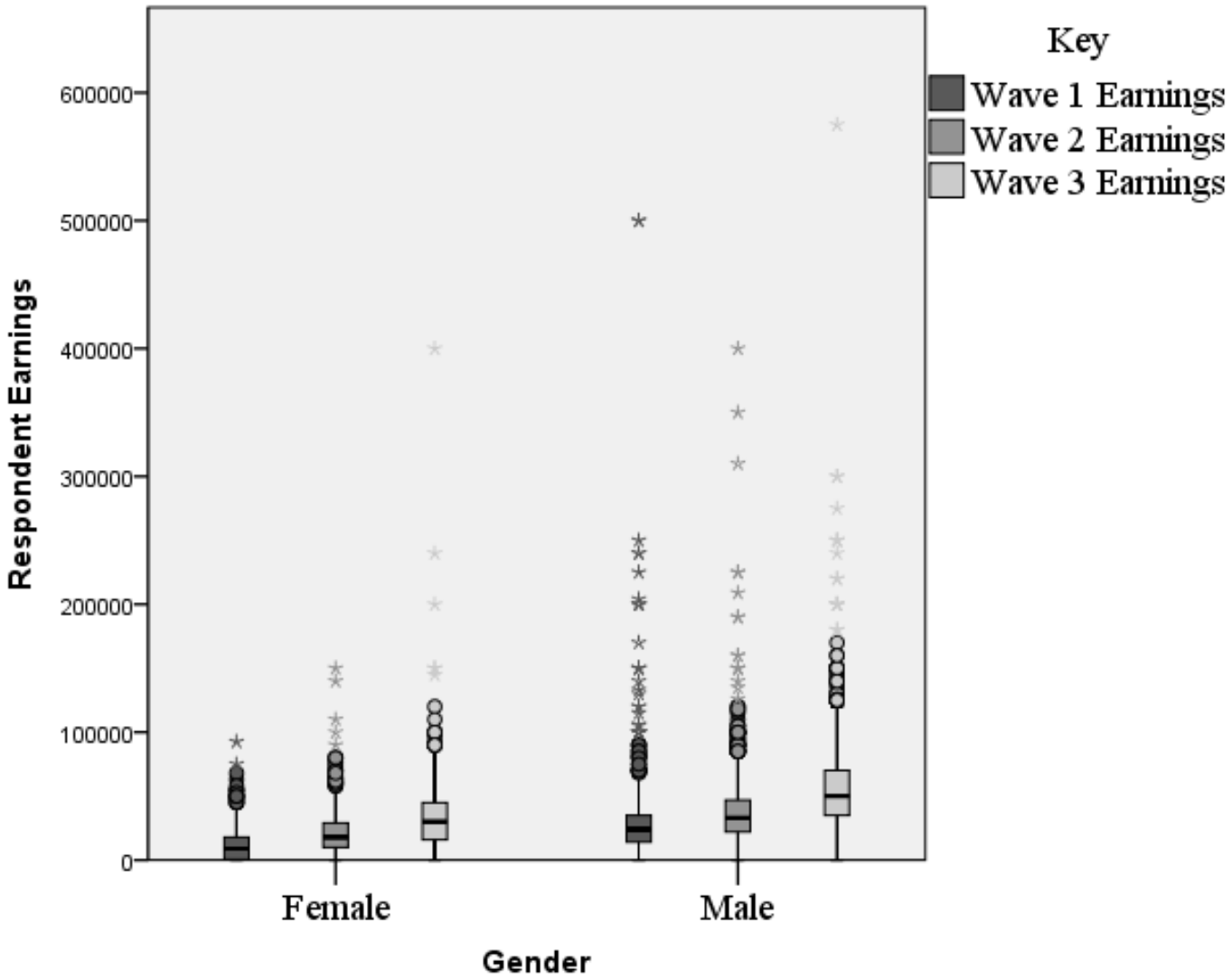

Figure 4.7 : Box plots of annual income by gender

"verbal aggression" are expected to earn about $938 (p<.01) less annually than their counterparts. Neither men nor women have significantly different incomes if they experience hitting or throwing objects, physically violent arguments, or if they use violence or are victims of partner violence.

Results from Wave 2 mirror Wave 1 in suggesting that males exposed to "verbal aggression" earn substantially more ($3018 annually, p<.001) than counterparts not exposed to verbal aggression. Additionally, females exposed to "verbal aggression" earn substantially less (-$1088 annually, p<.01) than non-exposed females. If there is hitting or throwing objects in the relationship, females are expected to earn about $1562 less than if there is not hitting or throwing objects in the relationship (p<.05), but there are no significant differences for males. If a partner or spouse uses violence, men are expected to earn about $2802 (p<.05) less than their partners, but there are no significant effects for women. Results indicate that violence does have a negative effect on income for both males and females, but the results are not symmetrical. In some cases, the violence or abuse benefits men, where it does not benefit women in any case. Additionally, more models show violence to be detrimental to female income than show violence to be detrimental to male income.

Results for Wave 3 indicate that males who experience verbal aggression are expected to earn over $5,142 more than nonverbally abused males (p<.001). There are no other significant differences for males and females in the cross-sectional models for Wave 3.

When models include the full sample, findings from Wave 2 show that physically violent arguments can be detrimental for both males and females. The results are

marginally significant (p<.10) for men, and significant (p<.05) for women. Tables displaying the full reports of these cross-sectional analyses are located in the appendix (Tables A.42 to A.45).

Longitudinal Analyses

In completing longitudinal analysis of married and cohabiting respondents, this research used the same control variables as in corresponding cross-sectional models. In addition to the control variables included in cross-sectional analysis, this research included "wave" in longitudinal models to control for the effects of time.

When using longitudinal data to assess the effects of violence on income of married and cohabiting couples, all models have significant Wald test results. This signifies that all models have at least one predictor variable with a nonzero coefficient. Models are adequate to assess income. Additionally, sample tests assessing models that include the full sample also report significant Wald test results. The full report of these model tests is located in the appendix (Table A.46 and A.47).

Longitudinal analysis of married and cohabiting respondents indicate that aggression and violence generally have negative effects for both men and women in intimate partnerships (see Table 4.31). Males exposed to hitting or throwing (coef. = -3080.35, p<.001) or physically violence arguments (coef. = -3110, p<.001), males who use violence (coef. =3587, p<.001) and males who are victims of female violence (coef. = 3079, p<.001) are all expected to experience lower income in conjunction with intimate partner abuse. For females, who experience verbal aggression (coef. = -8.96, p<.01), or hitting or throwing (coef. = -1042, p<.10), income is also likely to be significantly lower.

Table 4.31
Annual Income for Married and Cohabiting Respondents
Random Effects Linear Regression Models

Annual Income	Male (Obs.: 6225 , groups: 2686)			Female (Obs:10,249 ; groups:4032)		
	Coef.	p<|Z|	Robust SE	Coef.	p<|Z|	Robust SE
Verbal Aggression	1230.88		815.85	-896.62	**	326.89
Age	3.57		23.90	107.06	***	14.86
White	3065.38	***	531.94	-1858.42	***	418.26
Years Education	2619.68	***	162.65	1460.25	***	67.17
Wave	11457.18	***	566.39	12055.67	***	227.83
Constant	-26031.49	***	2478.07	-22505.26	***	1069.52
Hitting or Throwing	-3080.35	***	834.06	-1041.32	^	601.13
Age	-18.67		24.25	109.75	***	14.83
White	3040.06	***	529.07	-1974.10	***	415.84
Years Education	2605.77	***	161.88	1444.64	***	67.11
Wave	11351.27	***	555.94	12028.69	***	227.73
Constant	-23388.21	***	2326.74	-22688.57	***	1069.06
Arguments got physical	-3110.69	***	861.38	-550.23		658.07
Age	-15.66		23.95	112.10	***	14.77
White	3080.08	***	529.49	-1982.23	***	415.97
Years Education	2612.76	***	161.74	1448.31	***	67.09
Wave	11345.96	***	557.22	12025.71	***	227.81
Constant	-23726.84	***	2310.30	-22871.42	***	1064.63
Primary Resp. physically violent	-3587.79	***	960.83	-206.67		782.93
Age	-16.15		24.17	113.02	***	14.79
White	3048.61	***	528.71	-1980.85	***	416.04
Years Education	2616.05	***	162.05	1449.21	***	67.09
Wave	11380.45	***	556.01	12030.70	***	227.73
Constant	-23835.52	***	2327.99	-22957.67	***	1062.40
Partner / Spouse physically violent	-3879.11	***	989.60	-431.86		822.20
Age	-17.58		24.06	112.56	***	14.79
White	3064.68	***	529.34	-1979.78	***	415.98
Years Education	2614.51	***	161.84	1448.93	***	67.08
Wave	11371.50	***	556.00	12029.89	***	227.74
Constant	-23719.87	***	2313.50	-22925.97	***	1062.19

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Results for violence exposure at any time in the study, measured as a dummy variables, are found in Table 4.32. Results show that females experience marginally significant lower income for both verbal aggression exposure and physical aggression exposure ($p<.10$). Males exposed to verbal aggression are expected to experience higher incomes than are males who do not report verbal aggression ($p<.01$). When analyses include the full sample (see Table 4.33), males are expected to experience lower income if there are physically violent arguments, but females are not ($p<.001$).

Fairness of Spending Money

Another way of measuring resources is through the self-perceived fairness of spending money in the relationship. This dummy variable measures whether respondents believe that spending money in the relationship is fair for both partners (coded as "1") or unfair for one of the partners (coded as "0"). The modeled outcome in logistic regression models is the odds of having fair access to money for both partners compared to spending being unfair for one partner.

Univariate Analyses

Univariate analyses indicate that most male and female respondents in the sample felt that money spending was fair in the relationship. This variable was further broken down as "unfair to respondent", "fair to both," or "unfair to partner." Report results are divided as such in Table 4.34. These results indicate that while the overwhelming majority of couples feel that spending money is fair to both, males report more often than

Table 4.32
Annual Income – Longitudinal Analysis Using Random Effects Linear Regression Models. For married and Cohabiting Respondents.

Annual Income	Male (Obs.: 4244, groups:1595) Coef.	p<|Z|	Robust SE	Female (Obs:6555 , groups:2185) Coef.	p<|Z|	Robust SE
Any Physical violence at any time in study	1048.64		1829.71	-1678.83	^	902.36
Age	-147.08	***	35.39	103.44	***	25.60
White	3717.15	***	786.08	-2773.79	***	671.75
Years Education	2742.43	***	223.25	1590.41	***	108.93
Wave	11654.25	***	688.34	11799.44	***	309.79
Constant	-19119.65	***	3279.53	-22867.14	***	1819.42
Any Verbal Aggression at Any Time in Study	3135.17	**	975.52	-915.80	^	522.75
Age	-138.54	***	36.20	108.81	***	25.40
White	3240.08	***	798.46	-2625.51	***	676.59
Years Education	2668.26	***	219.27	1608.01	***	109.24
Wave	11604.97	***	682.38	11759.18	***	308.88
Constant	-19601.63	***	3306.09	-23110.09	***	1809.23

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.33:
Longitudinal Analysis of Annual Income. Full Sample Included.
Random Effects Linear Regression Model

	Male (obs. =6781, groups =2815)			Female (obs. = 9585, groups =4032)		
Annual Income : Random Effects Linear Regression Model	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Arguments got Physical	-2568.00	***	720.97	-322.18		424.73
Age	9.05		23.19	107.01	***	14.01
White	2962.56	***	515.28	-1423.10	***	399.31
Years Education	2647.97	***	155.23	1454.65	***	63.36
Current Partner	1692.64	*	712.94	-1300.35	***	340.71
Wave	11266.33	***	554.99	12099.83	***	204.05
Constant	-26631.58	***	2408.38	-22376.70	***	1024.47

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.34
Fairness of Spending Money – Univariate Analysis

	Wave 1		Wave 2		Wave 3	
	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)
Self-reported fairness of spending money in relationship						
Unfair	14.77	15.59	19.29	16.49	12.38	7.68
Fair to Both	85.23	84.41	80.71	83.51	87.62	92.32

females that money spending is “fair to both.” (see Figure 4.8). Additionally, females report that money is unfair to the primary respondent more often than do males. Unfortunately, the responses are so small in the “unfair” categories that there are not sufficient reports to merit a cross-sectional or longitudinal analysis as such. If there were more “unfair” responses, a multinomial logistic regression could be used in cross-sectional analyses, but there is not a similar command using panel data for longitudinal analyses. Because of these limitations, this research simplifies the variable into a dummy variable of “fair” or “not fair” for all cross-sectional and longitudinal analyses. As a dummy variable, between 7.7% and 19.29% of respondents in each wave felt that money spending was unfair. See Table 4.34 for complete details.

Cross-Sectional Analyses

As with each other analysis in this dissertation, analyses include cross-sectional analyses for each wave of the data using logistic regression models to assess whether or not there are gender asymmetries in money fairness for couples experiencing intimate partner abuse.

Testing of logistic regression models that examine the effects of violence on perceived fairness of spending money in married and cohabiting relationships indicate that each model has a statistically significant likelihood ratio test result. This signifies that for each model, at least one of the regressors has a nonzero coefficient. Additionally, a Hosmer-Lemeshow test indicates that most models are well fitting; we cannot observe a statistical difference between observed and model-predicted outcomes. In Wave 2, several male models did not meet this test criteria. Researchers should interpret these models with caution. Results of the full sample indicate a good fit by the

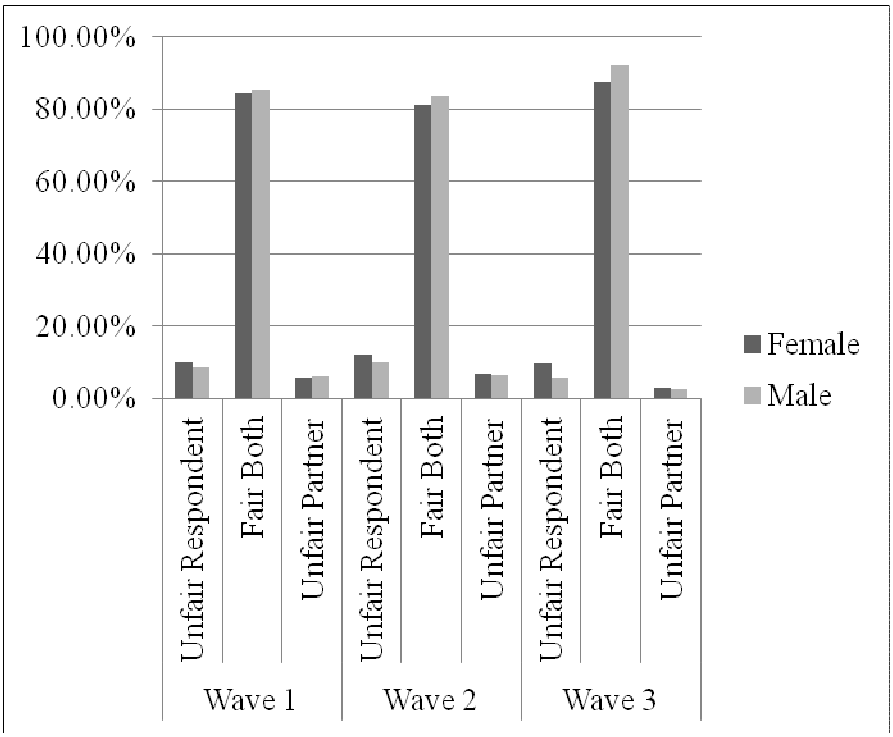

Figure 4. 8: Money spending fair by gender – Complete univariate report

Hosmer-Lemeshow test, and have significant overall likelihood ratio test score, indicating no problems for those models. The full model tests are reported in the appendix (Tables A.48 and A.49).

Cross-sectional results of married and cohabiting couples in Wave 1 indicate that both men (OR = .58, p<.01) and women (OR = .44, p<.001) have lower odds of report that spending money is fair in the relationship if there is verbal aggression in the relationship. When there is hitting or throwing objects, women have significantly lower odds (OR = .57, p<.001) of reporting that spending money is fair compared to women who are in relationships with no hitting or throwing of objects. There are no significant differences in hitting or throwing for men. Both men (OR = .66, p<.05) and women (OR = .53, p<.001) have lower odds of reporting that money is fair if arguments are physically violent. Additionally, both men and women have significantly lower odds of reporting that money is fair regardless of whether they use violence or are victims of partner physical violence.

Cross-sectional results of married and cohabiting couples in Wave 2 indicate that men and women reporting verbal aggression, hitting or throwing, physically violent arguments, using violence, or being the victims of partner violence all experience lower odds of reporting that money spending is fair in the relationship than do men and women in nonviolent relationships .

Cross-sectional results of married and cohabiting couples in Wave 3 indicate that both men (OR = .57, p<.05) and women (OR = .41, p<.001) have lower odds of reporting fairness of spending money if there is verbal aggression in the relationship. Additionally, if there is hitting and throwing in the relationship, men (OR = .31, p<.01) and women

(OR = .39, p<.01) have lower odds of reporting fairness of spending money. For each other category (physically violent arguments, using violence, being victim of partner violence), results show no significant differences in the odds of fairness of spending money for men. However, women have significantly lower odds of reporting fairness of spending money in relationships with physically violent arguments (OR = .24, p<.001), in relationships where women use violence (OR = .23; p<.001), and in relationships where women are victims of male physical violence (OR = .26; p<.05).

When the full sample is examined, both males and females report experience lower odds of fairness of spending money when arguments are physically violent, but in Wave 3, only women experience significantly lower odds (OR = .32, p<.001) of reporting fairness of spending money. A full report of these cross-sectional analyses is located in the appendix (Tables A.50 to A.53).

Longitudinal Analyses

Longitudinal analysis of the fairness of spending money included the same control variables as corresponding cross-sectional models. In addition to the control variables included in cross-sectional analysis, this research included “wave” in longitudinal models to control for the effects of time. Overall likelihood ratio tests, likelihood ratio of RHO tests, and Wald tests for married and cohabiting couples indicate that random effects logistic regression models assessing the effect of abuse on self-perceived fairness of spending money are adequate for predicting the outcomes of the dependent variable. All models were significant on each of the three tests, indicating that at least one predictor variable has a non-zero coefficient, and indicating that the panel-

level variance of the longitudinal data are better at predicting outcomes than would be cross-sectional data.

Model testing for the full sample indicates that at least one coefficient in each model has a non-zero coefficient, and that the panel-level variance is significant in predicting self-perceived fairness of spending money for both males and females. A full report of these model tests can be found in the appendix (Tables A.54 and A.55).

Longitudinal analyses indicate that both men and women experience lower odds. of reporting fairness in spending money if there is verbal aggression, hitting or throwing, physically violent arguments, if the respondent uses violence, or if the respondent is a victim of physical violence (see Table 4.35).

Table 4.36 reports results of violence measured as a dummy variable, indicating whether the respondent experienced physical violence or verbal aggression at any time in the study period. Results indicate that both males (OR = .48, $p<.001$) and females (OR = .48, $p<.001$) who experience physical violence at any time in the study period had lower odds of reporting fairness of spending money than did counterparts in nonviolent relationships. However, in emotionally aggressive relationships, men experience *higher* odds of fairness in spending money (OR = 1.50, $p< .01$). When the full sample in analyzed, results indicate that both males (see Table 4.37; OR = .55, $p<.001$) and females (OR = .59, $p<.001$) experience lower odds of fairness in spending money compared to counterparts in nonviolent relationships.

Table 4.35
Longitudinal Analysis: Money Fairness - : For Married and Cohabiting Respondents. Random Effects Logistic Regression Models. Outcome modeled is "Spending Money is Fair." Measured Each Wave.

Spending Money is fair for both spouses	Male (Obs:4776 , groups:1958)				Female (Obs:5716 , groups:2318)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	-0.68	***	0.51	0.15	-1.04	***	0.35	0.14
Age	0.04	***	1.04	0.01	0.03	***	1.03	0.01
White	0.52	**	1.68	0.15	0.22		1.24	0.15
Years Education	-0.04	^	0.96	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.09		1.10	0.14	0.09		1.10	0.12
Wave	-0.14	^	0.87	0.08	-0.25	**	0.78	0.08
Constant	1.48	***	4.38	0.38	1.99	***	7.34	0.38
Hitting or Throwing	-0.55	***	0.58	0.16	-0.64	***	0.53	0.15
Age	0.04	***	1.04	0.01	0.03	***	1.03	0.01
White	0.48	**	1.62	0.15	0.21		1.23	0.15
Years Education	-0.05	*	0.96	0.02	0.00		1.00	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.08		1.09	0.14	0.09		1.09	0.12
Wave	-0.15	^	0.86	0.08	-0.27	**	0.76	0.08
Constant	1.08	**	2.93	0.36	1.35	***	3.85	0.36
Arguments got physical	-0.61	**	0.54	0.18	-0.81	***	0.45	0.16
Age	0.04	***	1.04	0.01	0.03	***	1.03	0.01
White	0.49	**	1.64	0.15	0.20		1.22	0.15
Years Education	-0.05	*	0.96	0.02	0.00		1.00	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.08		1.08	0.14	0.08		1.09	0.12
Wave	-0.15	^	0.86	0.08	-0.29	**	0.75	0.08
Constant	1.04	**	2.83	0.36	1.33	***	3.78	0.36
Primary Resp. physically violent	-0.71	**	0.49	0.21	-1.09	***	0.34	0.19
Age	0.04	***	1.04	0.01	0.03	***	1.03	0.01
White	0.49	**	1.63	0.15	0.20		1.22	0.15
Years Education	-0.04	*	0.96	0.02	0.00		1.00	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.07		1.07	0.14	0.08		1.08	0.12
Wave	-0.15	^	0.86	0.08	-0.28	**	0.75	0.08
Constant	1.02	**	2.76	0.36	1.33	***	3.79	0.36

Table 4.35 Continued

Spending Money is fair for both spouses	Male (Obs:4776 , groups:1958)				Female (Obs:5716 , groups:2318)			
	Coef.	p<|Z|		Coef.	p<|Z|		Coef.	p<|Z|
Partner / Spouse physically violent	-0.68	**	0.51	0.21	-0.62	**	0.54	0.21
Age	0.04	***	1.04	0.01	0.03	***	1.03	0.01
White	0.50	**	1.64	0.15	0.22		1.25	0.15
Years Education	-0.04	*	0.96	0.02	0.01		1.01	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.08		1.08	0.14	0.08		1.09	0.12
Wave	-0.15	^	0.86	0.08	-0.28	**	0.76	0.08
Constant	1.02	**	2.77	0.36	1.20	**	3.33	0.36

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.36
Longitudinal Analysis: Money Fairness. For Married and Cohabiting Respondents. Random Effects Logistic Regression. Outcome Modeled is ”Spending Money is Fair”. Measured As Any Violence Exposure.

Spending Money is fair for both spouses	Male (Obs.: 3254, groups:1197)				Female (Obs:3758 , groups:1339)			
	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Any Physical violence at any time in study	-0.73	***	0.48	0.19	-0.77	***	0.46	0.19
Age	0.05	***	1.05	0.01	0.03	**	1.03	0.01
White	0.52	**	1.68	0.20	0.35	^	1.42	0.20
Years Education	-0.05	^	0.95	0.03	-0.03		0.97	0.03
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.05		1.05	0.17	0.06		1.06	0.15
Wave	-0.11		0.90	0.10	-0.14		0.87	0.10
Constant	0.29		1.34	0.47	1.77	**	5.88	0.52
Any Verbal Aggression at Any Time in Study	0.41	**	1.50	0.15	0.24		1.27	0.15
Age	0.06	***	1.06	0.01	0.03	***	1.03	0.01
White	0.49	*	1.64	0.20	0.38	^	1.46	0.20
Years Education	-0.05	^	0.95	0.03	-0.03		0.97	0.03
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.05		1.06	0.17	0.06		1.07	0.15
Wave	-0.16	^	0.85	0.10	-0.18	^	0.83	0.10
Constant	-0.07		0.93	0.46	1.40	**	4.04	0.52

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table 4.37
Longitudinal Analysis: Money Fairness - Full Sample Included. For All Relationship Types. Random Effects Logistic Regression Models. Outcome Modeled Is "Spending Money Is Fair. Measured Physical Violence Only.

	Male (obs. = 4994, groups =2059)				Female (obs. = 6061, groups =2481)			
Spending Money is fair for both spouses	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Arguments got Physical	-0.60	***	0.55	0.16	-0.53	***	0.59	0.14
Age	0.04	***	1.04	0.01	0.03	***	1.03	0.00
White	0.46	**	1.58	0.15	0.29	*	1.33	0.14
Years Education	-0.04	*	0.96	0.02	0.00		1.00	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income missing - replaced mean	0.02		1.02	0.14	0.12		1.12	0.11
Current Partner	0.38		1.46	0.48	0.66	^	1.93	0.39
Wave	-0.14	^	0.87	0.08	-0.29	***	0.75	0.08
Constant	0.57		1.77	0.57	0.54		1.71	0.51

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Conclusions: Research Question Four

Results of this research question illustrate many gender asymmetries, in social factors that affect health outcomes. Although there were some models suggesting higher stress with situational couple violence for both men and women, more cross-sectional and longitudinal models indicated that women experienced significantly higher stress with violence than do models assessing men. There is some indication cross-sectionally that men and women in abusive relationships experience lower social connectedness than do non-abuse exposed respondents are. These results were not strong longitudinally. Both males and females experienced disadvantages in income for violence-exposed respondents. The effects appear to be stronger for males. However, females start out at a greater income disadvantage than males, so the differences may be due to gendered differences in resource access. When this research measures resources as fairness of spending money in the relationship, both men and women in abusive relationships are report more often that money spending is not fair than do respondents in nonviolent relationships. When there is only significance for one gender, it is more often the females reporting that money spending is not fair in the relationship.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

As outlined in Chapter 1, the two-fold purpose of this research is to determine if situational couple violence is gender symmetrical, and to further the debate over the role of gender in IPA. To address the first purpose, the following section is used to interpret the noteworthy and significant findings of the research question results presented in the previous chapter. Then, the second purpose of this paper is met by discussing how these findings further the debate over the role of gender in IPA. Finally, this dissertation will identify the implications of these findings for future research of situational couple violence.

Symmetry or Asymmetry in Violence Victimization and Perpetration

Each research question in this dissertation tested for evidence of gender asymmetry among couples experiencing situational couple violence. In some cases, findings supported the hypothesis that feminist conceptualizations will reveal gender asymmetry in SCV. In other cases, there was not enough evidence to support this hypothesis

In addressing the first research question (whether or not there is symmetry in violence victimization and perpetration), this research first assessed rates of violence reported by men and women in the study sample. The rates of male and female

perpetrated violence look strikingly similar to findings by family violence theorists: when only rates and ratios of violence are examined, males and females appear to report similar levels of perpetration and victimization in this sample. One possible explanation for this is that the family violence theorists could be correct – perhaps in general population samples, violence is gender symmetrical {Dutton, 2006 #412; Fiebert, 1997 #350; Gelles, 1972 #418; Gelles, 2007 #421; Prospero, 2008 #666; Straus, 2006 #579; Straus, 1997 #385}.However, one primary purpose of this research was to look beyond surface –level symmetry and explore symmetry defined as including outcomes of violence, and resource allocation in violent relationships (in other words, contextualizing violence). When IPA is contextualized, as is done throughout this dissertation, gendered violence no longer looks symmetrical. Evidence supporting this statement is presented throughout the discussion. However, one cannot ignore the apparent symmetry in rates of violence found by exploring research question one. Although contextualizing violence reveals asymmetries in violence outcomes, one possible reason for the apparent symmetry in rates of violence is that instrumental data flaws of the NSFH may create an appearance of symmetry.

It is possible that limitations of the data set inhibit a full analysis of gender symmetry or asymmetry in situational couple violence. These limitations are most apparent in research questions one and two, which rely solely on measurements of violence from the modified CTS in the NSFH data.

In explaining results of the first research question, researchers must acknowledge that instrumental data flaws limit these findings. Primarily, results were limited because the data were only able to address the gender of the person *reporting* the violence (as

opposed to the gender of the person *committing* the violence) for most measures of violence exposure. One can conclude that this research supports previous findings suggesting women *report* their own use of violence more often than men (Dobash and Dobash 1998). This is important in recognizing that the "similarities" in rates of reported violence may, as is suggested by previous research, be a factor of gendered reporting differences that tend to mask male use of violence and inflate female use of violence (Dobash and Dobash 1998).

Across the board, married and cohabiting males reported higher levels of verbal aggression than did females, but differences in reporting of physical violence were generally nonsignificant ($P > .05$). The exception is that men reported more often that a female partner hit or shoved them ($P < .01$). In every data wave, the difference between married or cohabiting men and women who use violence was less than 1%. This suggests that rates of men and women who report using violence or being victims of violence are very similar in the data set. These findings do not support my research hypothesis, and are very similar to findings of "symmetry" presented by family violence researchers. However, it is important to examine the results in conjunction with the other findings of the study. Although there were similar rates of men and women who *reported* exposure to violence in a one-year period, this was only true for married and cohabiting couples, but not for divorced or separated couples.

Moreover, when violence reporting is contextualized through research questions 3 and 4, the results no longer look similar by gender. Instead of being evidence of gender "symmetry" in SCV, these findings are evidence of the need to contextualize violence. Perhaps the largest data limitation is that the data do not contextualize differences in

violence motives; data do not distinguish between self-defense violence or violence instigation, which are two different phenomenon (Johnson 2008). This lack of violence contextualization makes it impossible to conduct a complete analysis of violence symmetries and asymmetries.

Previous research findings of "symmetry" in SCV are often incomplete assessments of violence. Measures of violence in SCV rely on research using the CTS, or a modified CTS. As such, they are noninclusive of measures of sexual violence, and only include very limited assessment of violence from past partners. This is an important acknowledgement because unmeasured violence types are likely to have greater portions of *female victims and male perpetrators* than the types of violence assessed in this (and other similar) data (Kimmel 2002; Salari and Baldwin 2002; Tjaden and Thoennes 2000b).

We can conclude that the similar rates of violence reported signify that this data are representative of primarily couples experiencing situational couple violence or no violence in relationships. Furthermore, these results suggest that these data are similar to other data typically used by family violence theorists, and is very different from the shelter or victim services data typically used by feminist researchers (Johnson 2008).

It is important to note that assessments of research question 1 did not *all* point toward symmetrical measures of violence reporting. There is no evidence of gender "symmetry" in physical violence reported by divorced or separated respondents. In every wave, there are significant differences in gendered reporting for divorced or separated respondents (see Table 4.6), with women reporting much higher levels of physically violent arguments than men. This supports previous research suggesting that women are

more likely to report their own violence, while the opposite is the case for men (Anderson 2005; Brush 1990; Dobash and Dobash 1998; Kimmel 2002). This signifies that the numbers in research question one may look symmetrical simply because women underreport partner violence, and more accurately report their own violence; it is the opposite for males.

This finding is also supportive of previous research indicating that women are at risk of increased violence when a relationship ends (Johnson 2008). In *every wave*, the violence reports from divorced or separated females were significantly higher than reports from divorced or separated men. Research does not indicate a stark gendered division among corresponding analyses of married or cohabiting couples (Tables 4.5 and 4.6). When women try to leave violent relationships, they are at -risk of "separation assault"(Mahoney 1991: 6) . Previous research indicates that when women try to leave violent relationships, they are likely to be beaten, raped, assaulted, stalked or killed (DeKeseredy, Schwartz, Fagen, and Hall 2006; Mahoney 1991; Melton 2007; Sillito and Salari 2006) by violent or controlling perpetrators. The findings of this research also show that women report higher rates of victimization after leaving a relationship than while they are in a current relationship. This finding is important especially when researchers recognize that assessment of violence from previous partners was severely limited in this data; only a small portion of the questions assessing violence victimization were asked regarding former partners. The large majority of violence questions were only asked regarding current partners. Implications of this finding include a more complete assessment of violence from previous partners when assessing symmetry or asymmetry in violence perpetration and victimization.

Symmetry or Asymmetry in Injuries

Data limitations presented in assessing research question 1 also limit assessment of research question 2, which evaluates injuries that result from intimate partner abuse. Research of population-based large samples is not conducive to assessing injuries because of low rates of injuries reported in the general population, and thus low rates of injuries reported in large, nationally representative samples. Additionally, injuries may be lower in later waves if respondents experiencing severe violence drop out of the study, or if injuries decline over time because IPA declines with age. Within the data, injuries declined from Wave 1 to Wave 2, and again from Wave 2 to Wave 3, indicating support for the idea that either the more violent couples dropped out of the study in later waves, or that violence declines over time with age.

In contrast to typical data used by family violence researchers to examine SCV, Feminist researchers typically use data from shelter populations, emergency room populations, police data, or other similar sources. These sources provide a higher concentration of violent and injurious acts, and thus provide opportunities for greater analysis of injuries. Reports of injuries in this data were rare. Fewer than 2% of married or cohabiting males and females in the population reported injuries resulting from intimate partner violence (see Table 4.7). Assessment of injuries by divorced or separated partners reveal higher rates of injuries (up to 5.2% for females in Wave 1), but the rates are still low. In several waves, fewer than five total respondents reported injury victimization or perpetration. The low rates of injuries in the sample are further evidence that the data primarily represents SCV.

For respondents in current relationships, and respondents who were divorced or separated, a higher percentage of females reported injury from IPA than did males. Additionally, a higher percentage of females reported injurious victimization than reported injuring a partner. *In every wave, males reported lower percentages of injuries than did females*. These results support previous research findings by both family violence and feminist researchers (Brush 1990; Salari and Baldwin 2002; Straus et al. 2006; Tjaden and Thoennes 2000a; Tjaden and Thoennes 2000b) that females are much more likely to sustain injuries in intimate partner abuse than are males.

Furthermore, these findings indicate that higher rates of divorced or separated women reported injuries than did women in current relationships. This result is further evidence of female risk of separation assault{Mahoney, 1991 #663}. Results indicated that female respondents who were divorced or separated reported higher rates of injuries from assaults than did married or cohabiting partners. It is unknown whether divorced or separated women were more severely injured in the assaults in addition to being injured more frequently. This is a question future research should address.

The great limitation to question two is that the small number of respondents reporting injuries in the sample inhibits inferential analysis. It was not possible to know how injuries differ when controlling for race, ethnicity, education, income, or age because there was not a large enough portion of the population reporting injuries within each category to conduct reliable regression analysis. Because of this limitation, feminist research samples are often more suitable for a full analysis of injuries in intimate partner abuse.

An unexpected methodological issue with the data centers on the variable assessing verbal aggression. In several models, results for outcomes related to verbal aggression conflict with the results of each other type of violence measured. For example, when models assess the effects of verbal aggression on self-reported physical health outcomes for married and cohabiting females in Wave 3, the results indicate that females were likely to experience *better* health if exposed to emotional aggression. For all other measures of violence, results indicated *worse* health, or nonsignificant relationships (see the appendix, Table A.5). Similarly, in Wave 1 assessment of the effects of verbal aggression on stress for married and cohabiting females, the aggression-exposed females experienced *lower* odds of stress than the nonaggression exposed females; all other measures of violence resulted in *higher odds of stress* (see the appendix, Table A.27). Again, in measuring the effects of verbal aggression on income for married and cohabiting males in Wave 1, Wave 2, and Wave 3, men exposed to verbal aggression had incomes significantly *higher* than nonviolence exposed men (see the appendix, Tables A.42 to A.44), as opposed to results of other violence measures where significant findings indicated *lower* incomes. Similar results appear when this research measured verbal aggression as a dummy variable for the longitudinal assessment of the effects of emotional aggression on income (see Table 4.32). Furthermore, when verbal aggression is measured as a dummy variable in panel data analyses for married and cohabiting men, the men exposed to verbal aggression were *more* likely to report that spending money was fair in the relationship (see Table 4.36); other violence measurements showed a lower likelihood of reporting fairness in spending money.

At first glance, these examples appear to be inconsistencies in the relationship between IPA and outcomes. However, there was not a single model measuring *any* form of physical violence (hitting or throwing objects, physically violent arguments, using physical violence, being a victim of partner physical violence) that reported significantly *better* results for respondents exposed to violence. Quite the contrary – *every* measure of physical violence either had insignificant results, or indicated that violence or aggression *increased* the odds for negative outcomes for violence-exposed respondents.

These inconsistent results leave room for questioning if the measure in the NSFH is effective at assessing "verbal aggression." The NSFH question asks if couples ever "argue heatedly or shout at each other" when there is a disagreement. It does not ask anything about name-calling, swearing, belittling, controlling behavior, or other "verbal aggression." It may be measuring unhealthy communication patterns, but a couple can "argue heatedly" without being abusive. Although most researchers might agree that "arguing heatedly" or "shouting" are not healthy communication patterns, this is not an indication that the question at hand is really measuring "verbal aggression." If this measure is not actually assessing "aggression," how many other research studies that cite high levels of female verbal aggression as indications of gender symmetry, or even higher female violence (Prospero 2008) are not actually assessing a form of aggression at all? This question should be addressed through future research.

Although these, and other, methodological limitations prevent a full analysis of gender symmetry or asymmetry in the sample, the findings of research questions 3, 4, and 5 confirm that there is ample evidence of gender asymmetry in situational couple violence.

Inferential Findings of Gender Symmetry and Asymmetry in the Data

Research Question Three: Symmetrical or Asymmetrical Health Outcomes

Physical Health Outcomes

The overall results of the random effects logistic regression models examining the effects of IPA on physical health outcomes indicate that men and women experience asymmetrical health effects because of IPA. In both cross-sectional and longitudinal analyses, females who experienced violence also experienced lower odds of reporting good health or better in more than half of the models. For men, no cross-sectional models indicated a relationship between exposure to violence and physical health outcomes. In longitudinal analyses (which were shown by likelihood ratio of RHO tests to be the best models; see the appendix, Tables A.17 and A.18), married and cohabiting females experienced poorer health outcomes resulting from violence exposure in six of the seven models. This was also true in both models where the entire sample was included (see Tables 4.11 to 4.13). Conversely, there was only one model (measuring verbal aggression, which is disputed above) where exposure to violence had a negative impact on men's self-perceived physical health.

Results examining the effects of physical violence on physical health support the research hypothesis that feminist conceptualizations and methods reveal gender asymmetries in SCV. These findings show that abuse can have long-term health effects for women. These findings support previous research showing that exposure to intimate partner abuse leads to poor health outcomes for women (Coker et al. 2002; Ellsberg et al. 2008). These findings are important because they show that the physical health effects of

violence are gender asymmetrical; females endure most of the negative health effects from SCV exposure.

These negative female health outcomes are not dependent on injuries, but on the presence of SCV, which, by definition (Johnson and Ferraro 2000), has typically low injury rates. Although injuries may be a contributing factor to poorer health outcomes, they are not a necessary factor. This finding supports previous research suggesting that non-injurious effects of violence lead to poor health outcomes. For example, in Evan Stark's assessment of coercive control (2007), he presented evidence suggesting that violent and controlling men keep women in their control by using *nonviolent* control tactics, and that the "continuous nature of the battering experience"(Stark 2007: 99) (Stark 2007) , or the *cumulative effect* of battering makes IPA more dangerous. With this in mind, it is likely that the negative effects of battering come, not only from injuries, but from the *cumulative effect* of years of entrapment, control, hurt, subjugation, and fear inflicted on victims by perpetrators. Other research indicates that females exposed to IPA have higher levels of cortisol (which leads to negative health effects with long-term exposure) than nonviolence exposed women (Pico-Alfonso et al. 2004). When we consider the continuous nature of battering for many female victims, coupled with the negative effects of long-term stress associated with violence, it is evident that the chronic stress associated with IPA may lead to these negative health effects. With this in mind, future research should address the different types of health disparities that may result from victimization within a range of abusive tactics. Furthermore, policy makers should be careful not to limit services only to physically injured women.

It is often assumed that if both members of the couple are using violence, the violence must be "mutual," but this research presents clear evidence that even in cases where both members of the couple may be using low-level violence, the long-term outcomes are worse for women. This implies that male violence and female violence are qualitatively and contextually different from each other. Policy makers may consider this when determining dual arrest policies that may punish both the primary perpetrator and a victim who fights back. These findings support previous research indicating that even when both men and women use violence, it is the women who are most often harmed (Jacobson and Gottman 1998).

These findings did not show evidence to support previous research indicating that intimate partner violence has negative effects on men's physical health (Coker et al. 2002). If there are unmeasured negative effects for male health, they may not be visible because that the data do not contextualize differences between self-defense and aggressive motives. It is possible that the data mask negative effects for male primary victim by inclusion of male perpetrators as "victims" if their partner fought back. The data group males who are primarily victims with males who are primarily perpetrators, and so any results of poor health for male victims may not be evident in results. Previous research suggests that violent females are often acting in self-defense, or "fighting back" to male violence (Johnson and Ferraro 2000; Johnson, Vangelisti, and Perlman 2006). This is another indication of the need to contextualize motives in violence. Researchers can accomplish this by distinguishing between violence used in aggression and violence used by a primary victim in self-defense; doing so will allow for an improved analysis of both males and females who are primary victims of partner violence.

Another explanation for the lack of a significant relationship between male health and violence is that female violence does not produce the same negative effects on health as does male violence. The male advantage in access to resources, and in ability to escape relationships, coupled with male advantage in size and strength, may lead to better than expected outcomes for men who are victimized. This explanation would further support the finding that male and female violence is qualitatively and contextually different.

Emotional Health Outcomes: Depression

At first glance, the results for models examining depression outcomes indicate gender symmetrical depression for men and women exposed to intimate partner abuse. Regardless of gender, respondents who experience intimate partner abuse are significantly more likely to report depression in the week preceding the survey. Previous literature suggests that men may use violence in response to depression, while women develop depression in response to violence. This means that there may be a symmetry of reporting depression, but the relationship between depression and violence may be gender asymmetrical (Dietmar et al. 2005; Palsson et al. 2009; Vaeth et al. 2010). Evidence indicates gender differences in depression and violence because men exposed to physical violence at any point in the data do not have significantly higher odds of experiencing depression, but women do (see Table 4.17). Baring the cases of verbal aggression, this is the *only* case where exposure to violence does not lead to depression in the models tested. The corresponding measure of female respondents indicated that there *was* higher depression for females ever exposed to violence. This could be an indication that acute depression for men may *precede* violence. However, for women, depression may be the *result* of being a victim of IPA. Furthermore, female depression resulting from IPA could

be chronic. Further research on the relationship between IPA and depression may determine if males and females experience symmetry of depression because of exposure to IPA.

Although some of the results appeared symmetrical, the lack of contextualization of gender within the research instrument made it impossible to determine the extent to which data substantiates support for gender differences in depression. Future research of depression in SCV should contextualize for possible gender differences in causes of depression, and should ask more questions to differentiate between violence-caused depression and depression-caused violence.

Emotional Health Outcomes: Fear

In cross-sectional analyses, several models indicate that both men and women exposed to intimate partner abuse have higher odds of reporting fear than their nonviolence exposed counterparts (see the appendix, Tables A.19 to A.21). There are 15 cross-sectional models where women experienced significantly higher odds of fear ($P<.05$) with violence exposure; there are 10 cross-sectional models where men experience significantly higher odds of fear with violence exposure (see the appendix, Tables A.19 to A.22). Although both men and women reported experiencing fear, the results indicate that women were significantly more likely to experience fear with violence exposure in 50% more of the models than were men. This signifies that while both men and women can experience fear with violence, women report more fear in conjunction with violence than do men.

Longitudinal examination of fear measured as verbal aggression, hitting or throwing, physically violent arguments, use of violence, or victimization of partner

violence, indicate that in all models, both men and women have higher odds of experiencing fear if there is violence in the relationship (see Table 4.21 and Table 4.23). However, when violence is measured as any physical violence (dummy variable measure; Table 4.22) or any verbal aggression in the study period, there is no relationship between fear and violence for men, but both physical violence and verbal aggression lead to higher likelihood of fear for women ($P<.01$). These results suggest that while there is evidence of fear from IPA reports for both genders, the data be insufficient to explore asymmetries. For example, the question in the NSFH does not clarify *why* respondents reported being fearful in the past 7 days. There is no differentiation between fear of harm, fear of a relationship ending, and fear of arrest because of use of violence. From these results, we can infer that females experience greater chronic fear from violence exposure, while male fear is more acute and related to the current violence.

Overall these results suggest that both men and women experience higher odds of fear in violent relationships, but those odds of fear are significant more often for women than for men. This supports previous research findings that women experience more fear because of IPA than do men (Belknap and Melton 2005; Campbell and Lewandowski 1997; Johnson 2005; Kimmel 2002; Melton and Belknap 2003).This could be an indication that women might be using violence because they fear a partner, or in self defense. The finding that fear is more chronically experienced for women than for men shows that it is important to contextualize fear in violence. While both men and women have higher rates of fear when exposed to SCV, these similarities disappear when the measurement of fear is changed. Women who have *ever* experienced IPA are more likely to experience fear, but the same is not true for men. This finding correlates with Evan

Stark's research of coercive control by showing that women may experience fear from a partner even when current physical violence is present. Past violence, with threat of future violence can have the same effect as current violence for female victims (Stark 2007) .

Gender differences in the origins of fear can explain the asymmetrical fear outcomes. In Brownmiller's classic piece on rape, she explains that historical dominance of male violence creates a "Conscious process of intimidation by which *all men* keep *all women* in a state of fear" (Brownmiller 1975: 7). Although both genders report fear at the time of the event, contextualizing the gendered cause of the fear could lead to a better understanding of these subtle gender differences in fear experienced by respondents. Historical patriarchal supremacy has created a social environment where male violence causes greater fear than does female violence (Belknap and Melton 2005; Stark 2007). To disregard historical contexts of gendered power and argue that gender is a nonissue is to ignore the "elephant in the room." Unfortunately, the questioning in the NSFH does just that. Future research should assess whether the sources of this fear (for example, fear of harm or fear of being caught using violence) differ for men and women in violent relationships.

Health Outcomes: Conclusions

Assessment of physical health outcomes, depression outcomes, and fear outcomes identify many gender asymmetries in health outcomes related to violence exposure. For each of the three categories, gender differences were more likely to be significantly detrimental to female physical health, depression, and fear. The results indicated fewer significant relationships between male physical health, depression, and fear than for

female outcomes. Although there are shortcoming in the measures and data, the findings of research question three generally support the research hypothesis that use of feminist conceptualizations and methodologies reveal gender asymmetries among couples experiencing situational couple violence.

Research Question Four: Are Gender Symmetries or Asymmetries in Social Factor Outcomes that Effect Health?

Stress Outcomes

In cross-sectional analyses, the relationship between stress and violence is inconsistent. There is no relationship between physical violence and stress for married or cohabiting respondents in Wave 1. In Wave 2, females who experience hitting or throwing, physically violent arguments, abuse from a partner, or who use physical violence have higher odds of experiencing stress than do nonviolence-exposed women. The relationship is only significant in one model of physical violence (hitting or throwing objects, to be specific) for men (see the appendix, Table A.28). However, when physical or emotional violence reported at any time in the study is not limited to married and cohabiting couples (see the appendix, Table A.29), results indicate that women are significantly more likely to report experiencing stress, but men are not. This is an indication that stress related to IPA may be more common among divorced or separated women. Regardless of marital status, male stress and male violence are not significantly related.

This may be an indication that separation or divorce concurrent with violence is a larger stress for women than for men. A big part of this is assumed resource allocation by gender; because of traditional gender roles, women often experience increased financial

stress, and stress from primary responsibility for childcare in a divorced situation. Male economic dominance and female care-work disadvantage leads to male financial benefit in divorce. To clarify, although men's standard of living increases, women loose about half of their income with a marital disruption (Bianchi et al. 1999; Smock et al. 1999). In a relationship with IPA, women may experience greater harm because of an inability to fight the abuser for assets in the divorce process. This would support previous research indicating that female victims of IPA report experiencing more financial stress, legal issues, and transportation issues than nonviolence exposed women (Bhandari, Levitch, Ellis, Ball, Everett, Geden, and Bullock 2008). These factors may lead to the greater stress for females than males seen in both Wave 1 and Wave 2 of the findings. Even when men experience violence in relationship, and even when the relationships end in conjunction with the violence, men have economic and financial resources at their disposal that may lessen the stress associated with leaving a violent relationship.

When this research uses longitudinal analysis with random effects regression to assess the relationship between IPA and stress, results show when *verbal aggression* is present, married or cohabiting men, but not women, may be more likely to report higher stress in the relationship. The relationship is marginally significant ($P<.10$). However, there are no other significant or marginally significant effects for men. Again, this shows the conflict between findings of "verbal aggression" measures and physical aggression measures in the study.

For married or cohabiting women, each model of stress and physical violence, hitting or throwing objects, using violence, or being a victim of partner violence is either significant or marginally significant (see Table 4.25). The results for the full sample are

substantively the same; women, but not men, experienced significantly higher odds of stress when physical violence was present (see Table 4.26).

These results indicate that women who experience physical violence, hitting or throwing, or use violence, have a higher likelihood of experiencing stress than women who were exposed to verbal aggression, or than women who were not exposed to violence. The high stress for females who *use violence* indicates a need to further research female use of violence, and to contextualize violence by differences in self-defense motives and aggressive motives. It is probable that higher female stress accompanying the use of violence is associated with being a victim of male violence, or the stress of having to defend one's self or fight back. The finding that women who use violence experience increased stress, but men who use violence do not, is an indication that the motives, meanings, and outcomes of violence use are different for men and women. While stress could plausibly be either a precursor to using violence, or an outcome of violence victimization, these finding indicate that it is neither for men, and possibly both for women. Cross-sectional results linking IPA to stress indicate that in Wave 2, women who experienced IPA had higher odds of also experiencing stress. In cross-sectional research findings, this is an indication that women who use violence experience higher stress in conjunction with that violence; cross-sectional data cannot parse out which came first. However, longitudinally, IPA leads to higher odds of stress for women. This means that regardless of whether stress of male violence victimization precedes female violence, the use of violence leads to further stress for women. This offers support for the idea that violence is contextually different by gender. It could be an indication that violence training is different.

This finding also shows support for the theory that use of violence is perceived differently by gender; because male violence is more socially accepted (and even a sign of masculinity), males may not feel stress from going against gender norms when they use violence. Conversely, females who use violence experience stress. Breaking social norms that prohibit female use of violence may lead to this stress (Anderson 1997; Anderson 2005; Anderson and Umberson 2001). If this is the case, the stress associated with the violence use may lead women to remember more of their own violence, and report more of their own violence, than is the case for male violence, as has been theorized by feminist researchers (Dobash and Dobash 1998).

Another explanation is that females who use violence experience stress from using violence because female violence is not equivalent to male violence. If a female is fighting back, or using self-defense, her lack of training in violence (and smaller physical build from socialized pairing with a larger partner), mean that her violence does not do much to protect herself against the male partner. Additionally, the larger social structure of gender inequality means that women have few resources to use in escape of violent relationships (Anderson 2005), and may use violence because it is one of the few means available by which they may be able to escape a violent or controlling relationship.

The stress reported by female *victims* may stem from being a victim of male violence. As was mentioned above, the stress of being financially unable to leave an abusive relationship may play a part in higher female stress. Unfortunately, it is impossible to know the cause of the stress because of the data deficiencies in contextualizing stress and violence together. Although we do not know the reasons for

the differences, the analyses at hand indicate that gender asymmetries in stress result from intimate partner violence. Future research should clarify these differences.

The results of the second research question indicate that stress may be a mechanism that negatively affects women's physical health. Previous research also indicates that increased stress leads to poor health outcomes (Pico-Alfonso et al. 2004). This research indicates that women exposed to violence experience increased stress, and worse health outcomes than women not exposed to IPA.

Social Connectedness and Isolation Outcomes

Cross sectional research of married and cohabiting respondents indicates that both men and women experience decreased social connectedness with the presence of intimate partner violence (see the appendix, Tables A.34 to A.36). However, in longitudinal models, there is no evidence of decreased social connectedness for men. Women who experience physically violent arguments, or who use physical violence, experience significantly lower social connectedness than nonviolence-exposed women (see Table 4.28). The same is true for women when the full data sample is included (Table 4.30), but is not true when physical violence or verbal aggression are examined as dummy variables (where violence at any point in the study period is compared to no violence in the study period; (Table 4.29). This is an indication that married or cohabiting women who experience physically violent arguments (or who use violence) have lower social connectedness than nonviolence-exposed women do. This supports previous research suggesting that female victims of physical violence experience greater isolation than do nonabused women (Menjivar and Salcido 2002; Pence and Paymar 1993; Walker 1979). The lack of significance for the dummy variable assessment of any violence in the study

period indicates that decreased social connectedness is acute and only significantly affected by current violence. Furthermore, the decreased social connectedness when women use violence may be an indication that women use violence in response to partner isolation or control tactics. Women may be using violence in these relationships as a way of combating isolation or trying to escape a violent partner. It is unfortunate that these data do not ask about coercion, isolation, or nonviolent use of control in relationships; such questions would have allowed for further analysis of this subject.

Resource Outcomes

Self- reported income of respondents is one way of measuring resource allocation and access in the data. One problem with using income as a measure of resource is that those with lower income are more likely to experience intimate partner abuse in the first place (Evans 2005). This means that while intimate partner abuse may lead to lower income, lower income is also a precursor to intimate partner abuse. Moreover, there are inherent *gender differences in income* resulting from traditional breadwinner and homemaker roles. Because of these factors, results might not accurately reflect differences in income by violence exposure so much as differences in income by gender. For this reason, this research later addresses the question of whether spending money in the relationship is fair or not.

Income results are mixed. In several models addressing verbal aggression, men's income actually *improved* with the presence of verbal aggression, while there was a decline in female income (see the appendix, Tables A.42, A.42, A.44, and see also Table 4.32). There was *not one* model where women's income improved with verbal aggression. If there was a statistical difference, the female income declined. This is

further evidence that "verbal aggression" may not actually be measuring "aggression," but rather some other factor related to being in a relationship; the trends we see here mimic the trends we see in typical non-violent married-couple relationships. Specifically, married men often see an increase in income, while married women experience a decline in income (Crittenden 2002; Kimmel 2002).

When examining models that do not look at verbal aggression, it seems that there are more instances where physical violence or use of violence has a statistically significant impact on men's income than on women's income. However, as mentioned earlier in this section, there are inherent gender differences in income. The significant differences for male respondents could appear more prevalent simply because of gendered working patterns. For example, females from high- income households with non-violent relationships may be more likely to be homemakers or to work part time jobs, rather than working full time. This following of more "traditional" gender-work roles would make their income appear low, but would not be an accurate depiction of *resource availability* in the relationship. On the other hand, a woman in a violent relationship may be forbidden from working by a controlling husband or may have no access to money within a relationship; some controlling and abusive men even limit a wife's access to her own paycheck (Pence and Paymar 1993; Stark 2007). Annual income is not a good indication of overall access to money or fairness of spending money in the relationship because income does not always reflect *access to resources* within relationships.

However, another way of measuring access to resources is in self-perceived fairness of spending money in a relationship. Within the models assessing fairness of spending money and violence, both males and females in cross-sectional and longitudinal

models were significantly more likely to report that *money spending was unfair* if they were in a physically violent or verbally aggressive relationship (the appendix, Tables A.51 to A.55 and Chapter 4, Tables 4.35 to 4.37). Only in one case, measuring verbal aggression for men (Table 4.37), was aggression actually linked to a higher likelihood of reporting that money spending was *fair* in the relationship. Again, it seems highly unlikely that verbal aggression would lead to *increased fairness* in spending money in the relationship. Researchers should interpret this measure of verbal "violence" with caution.

Overall analysis of fairness in spending money indicates that there is symmetry in measurement here; both men and women in violent relationships have lower odds of reporting fairness in spending money than counterparts in nonviolent relationships. However, this does *not* mean that fairness in money spending is symmetrical. Instead, both male and female respondents are actually reporting that in violent relationships, access to spending money *is asymmetrical*. The data weakness is that we do not know the direction of that asymmetry. We cannot tell by these analyses if the spending is unfair to the wife, or unfair to husband. While future research may determine the direction of this asymmetry, these results indicate unfair access to spending money in abusive relationships.

Conclusions of Research Question Four

Overall, results of research question four indicate that women in violent relationships experience significantly higher stress, lower social support, and lower access to resources than do women in nonviolent relationships. Moreover, there were more examples of significance in these areas for women than for men, indicating that the effects on females are much more widespread than the effects on males. These gendered

differences in health outcomes are evidence of the asymmetries present in situational couple violence when researchers look beyond descriptive level analysis of violence incidence and prevalence.

These differences imply that the social construction of gender in relation to stress, social support, and access to resources create an uneven playing field where, even among couples experiencing SCV, violence cannot be seen as "gender symmetrical" because *gender is not symmetrical*. Previous simplification of gender to an independent variable measuring sex frequencies in use of violence has neglected to conceptualize *gender* as it affects the overall structure of relationships.

Feminist theories, in conjunction with resource theories, explain that patriarchal subordination of women through resource control is one reason that IPA cannot be "gender symmetrical." The enormous differences in annual earnings by men and women in the study, coupled with the agreement by respondents that money spending is unfair in the relationship, supports theories of unequal allocation of resource by gender. Moreover, it suggests that financial control is a means through which society perpetuates control over women by men; if women are financially unable to leave abusive relationships, they are at a disadvantage compared to men. This is true even in relationships where both members of the couple use violence.

The higher stress, and lower social connectedness, of women exposed to violence compared to nonviolence-exposed women are indicative of further gender asymmetries in SCV because these same factors were largely insignificant for violence-exposed males. This finding that IPA leads to stress and isolation for women, but not men, is an indication of the need to contextualize violence in order to determine *why* there are

gendered differences in these outcomes. Furthermore, the findings support the idea that meanings and motives behind violence use and violence victimization may be qualitatively different for women than for men. For example, society often perceives female violence as less dangerous, or less threatening than male violence (Anderson 2005; Anderson and Umberson 2001). This means that even if females use violence, it does not lead to added stress for males, and does not have the power of reducing social contact (increasing isolation) for males. On the other hand, past research has found that male violence provokes greater stress (Pico-Alfonso et al. 2004), and is leads to more isolation (Johnson 1995) (Jacobson and Gottman 1998; Pence and Paymar 1993) than does female violence; both of these previous findings were substantiated by this research.

How Findings Further the Debate of Gender in IPA

Assessing the overall picture of these findings indicates a plethora of gender asymmetries in situational couple violence. Although the significance and strength of the asymmetries vary by research question, the results point to asymmetries for every research question addressed in this research. These findings and results can substantially change both sides of the debate of gender in IPA.

On one side of the debate, family violence researchers have suggested that violence, not gender, is the primary issue at hand in low-level violence (Dutton 2006; Straus et al. 2006). These results indicate that although violence can have negative effects on both genders, female victims experience the effects to a greater extent than do males. Furthermore, family violence researchers have suggested that past research by feminist authors is limited when it only reports on victims or perpetrators of violence, but not both (Straus et al. 2006). This research includes reports of both victims and users of violence,

yet results still point toward gender asymmetry. These results challenge the assumption that including both victims and perpetrators will reveal symmetrical violence. Even when both are included, females are more likely to suffer negative outcomes as a result of violence exposure.

On the other side of the debate, feminist researchers have generally argued that although men and women use violence in relationships, females sustain more harm because of intimate partner abuse (Jacobson and Gottman 1998; Melton and Belknap 2003; Miller 2005). The results of this study generally support this finding. Although a few models indicated that intimate partner abuse had negative implications for both men and women, the majority of significant models pointed toward negative outcomes for women only. Even women who used violence suffered poor negative effects from the violence; this supports previous findings that although women do use violence, the harm incurred is greater for them than for men (Jacobson and Gottman 1998; Melton and Belknap 2003; Miller 2005). It also supports the idea that female use of violence may be in self-defense or fighting back (Jacobson and Gottman 1998; Johnson 2008; Miller 2005) since the outcomes of these violence-using women mimic the outcomes of female victims more often than the outcomes of male perpetrators of violence. This is an indication that male and female violence are qualitatively different; they are not used for the same reasons, and do not lead to the same results.

Until now, theorists have indicated that the opposing findings of “symmetry” and “asymmetry” were based on sample size and selection; feminist researchers often use small convenience samples composed of shelter clients, emergency room patients, or police violence reports, while family violence theorists used larger samples with a

smaller concentration of respondents experiencing abuse. This prevailing theory explained that sample selection led family violence researchers to primarily find symmetry through research of situational couple violence, but led feminist researchers to find asymmetry through research of intimate terrorism (Johnson 2008). However, the results of this study conflict with Johnson's explanation of the differences between groups in the symmetry debate.

In considering the sample, it is important to note that the gender differences found in this study are conservative estimates. Although the sample is likely to include some couples experiencing severe violence, these couples may be more likely to drop out of the survey in later waves. Furthermore, the survey asked fewer questions about violence in divorced or separated relationships; if couples experiencing severe violence ended the relationship, this violence is not fully assessed in the survey. This means that in the survey, and especially in later data waves, the couples experiencing IPA are likely to be experiencing low-level violence.

These findings show that even when using a large, nationally representative sample, contextualizing violence and gender (to the extent that it was possible with data limitations) reveal gender asymmetries for couples primarily experiencing situational couple violence. This findings conflicts with previous theoretical assumptions of symmetry in nationally representative data set measures of situational couple violence (Johnson 1995; Johnson 2008) or couple fights (Stark 2007). Because so many family violence projects using the CTS and limited measurements of violence have found "symmetry," and because feminist researchers have generally overlooked assessment of SCV within the context of gendered violence, this finding of *gender asymmetry* in SCV

begs for a reconsideration of previously held assumptions of gender in large, nationally representative samples.

The findings of gender asymmetry support feminist theories and ideologies by indicating that women primarily experienced negative outcomes from violence exposure. This research calls for a contextualized research of SCV that can assess differences in motivations for violence use (for example, contextualizing violence by self-defense motives), and qualitative differences in male and female violence. It should be stressed that these findings *do not* mean that men can never victims of violence, nor that female violence cannot cause harm. However, the way SCV is typically measured inflates female perpetration, and masks any true victimization of males because of the classification of primarily male perpetrators as "victims" if the female victim ever fought back. Research of SCV without contextualizing by gender does a great disservice to *both* genders by making female victims look like perpetrators, and by masking male victims in a sea of primarily perpetratorial males. Only through identification of motives behind violent acts will future research be able to parse out the full range of effects of victimization and perpetration on health and social outcomes for both genders.

The research addressed in this dissertation challenges currently accepted conceptual beliefs and methodological practices used in SCV research today. The implications for future research include adaptation of conceptualizations and methods in future research to uncover gender disparities and asymmetries among couples experiencing situational couple violence.

Implications of Findings for Future Research

Conceptual Implications

"Situational Couple Violence"

Implications of these findings include reassessing commonly held assumptions in conceptualizing SCV. Primarily, these findings show the importance of examining situational couple violence in the context of gender. Previous researchers' definitions of SCV follow Stark's explanation (although he calls it "couple fights"), and carry the assumption that,

> The majority of incidents population surveys identify as domestic violence are properly understood as fights in which one or both partners use force to address situationally specific conflicts [wherein] neither [partner] is sufficiently fearful to seek outside assistance, both partners view the use of force as a legitimate (if not necessarily desirable) form of conflict resolution, and injury is very rare (Stark 2007: 234).

These assumptions neglect to contextualize gender; gendered differences present in other types of IPA also influence SCV. Most feminist authors agree that the measure of violence over a one year period as gender symmetrical violence is "virtually meaningless" (Johnson 2006: 60), yet they still hold the unfounded assumption that partners using this type of violence are somehow on equal ground, or that the fights are seen by both partners as "legitimate."

Although both partners may use violence to some degree, victims may not seek outside assistance, and injuries may be rare, research has not shown that these factors are necessary or sufficient to indicate gender symmetrical violence. Instead, we can see that violence may be gender asymmetrical even if both partners use violence, neither seeks outside help, and if there are no injuries. If one partner is using violence in self-defense,

the violence is not "gender symmetrical." Victims may not seek outside help because of lack of resources, a belief that agencies will not provide assistance, or fear that seeking help will cause greater harm than temporarily living with the violence. Victims may not report injuries. Factors contributing to help-seeking, injuries, and violence motivation may vary by gender.

Previous lack of contextualization has led to a misconception of SCV as gender "symmetrical." When contextualized, gendered differences in outcomes indicate that women primarily experience negative effects SCV. These findings are in opposition to previous work by family violence researchers suggesting that men and women use violence for the same reasons with the same results (Dutton 2006). Moreover, these results indicate that even if *control* is not the central issue in SCV (Johnson 2006), abuse is still harmful to women; even when both genders use violence, the effects of the violence are quantitatively, and qualitatively different.

Previous research by feminists has largely neglected to assess situational couple violence. Presumably, this neglect is because of the widely held assumption that SCV was more symmetrical, and because large sample sizes do not have the same concentration of victims as convenience and victim samples. However, this research shows strong evidence of gender asymmetries in outcomes of SCV. In future research, feminists can apply their conceptualizations of gender symmetry, perpetration, and victimization to similar data sets in an effort to assess the current assumption of symmetry in SCV. This would further strengthen feminist argument that gender is the central risk factor for IPA victimization. When research, such as this, suggests that even

when women use violence they have poor outcomes, and that the outcomes are not as poor for men, it is evidence that male and female violence are contextually different.

"Gender Symmetry"

Family violence research of the past has often measured and defined "gender symmetry" as similar rates of men and women who use violence in current relationships over a one year period (Straus et al. 2006), or as violence that is used mutually by both partners (Cook 1997). This research indicates that surface-level similarities in violent acts reported *do not* indicate symmetry in outcomes of violence. Instead, even with similarities in rates of reported violence use and perpetration, as shown in research question one, there are still underlying gender asymmetries in the outcomes of violence. The results here show that simply counting frequencies is inadequate to assess "symmetry." Future research of intimate partner violence should include violence outcomes as part of the analysis of symmetry. Researchers may consider questioning the validity of research showing surface level "symmetries" using only a limited conceptualization of the term.

Family violence measures of gender symmetry often neglect assessment of the motivations for violent acts, with no distinguishing between violent acts of aggression and violent acts of self-defense. Without contextualization of violence motivations and outcomes, it is not possible to assess the full range of asymmetries in intimate partner violence, or to determine if there are gender differences in primary victims or primary aggressors. Comparing the results of this research emphasizes the need to contextualize violence. In research question one, I primarily assessed violence by simple counts and reported frequencies of violence exposure. The results here looked strikingly similar to

"gender symmetry" findings of family violence theorists. However, by contextualizing the violence, and by assessing outcomes and gender differences in a range of violence-related outcomes, the results unmistakably pointed to gender asymmetry in violence. Only through looking past the surface level, symmetries into the context of the violence were these differences illuminated. Future studies should consider contextualizing SCV in terms of self-defense motives to understand the differences presented in these findings.

Current assessments of "gender symmetry" in SCV lack assessment of *gender* in SCV. To quote Evan Stark, a prominent feminist theorist,

> Even if male and female partners use force in similar numbers, woman battering is qualitatively different than other forms of abuse or assault in that it extends over time and through social space and exacts a significant toll that cannot be explained by injury or violence (Stark 2006: 1021).

This research fully supports the idea that male and female violence are "qualitatively different" (Stark 2006, 1021). Male and female violence have different motives, results, and outcomes. The effects of gendered violence on victims are not the same. To examine male and female violence as one phenomenon is like saying apples and oranges are the same fruit. Although males and females both use violence, the *context* in which the violence takes place, and the effects of the violence, are substantively and qualitatively different.

<u>Health Affected Through Mechanism in Addition to Injuries</u>

Previous research assessing the effects of intimate partner abuse has focused on injurious outcomes as the mechanism through which health outcomes are more likely to be poor for victims of IPA. However, this research indicates that stress, unfair access to resources, and decreased social connectedness are also mechanisms that diminish health

outcomes for victims of situational couple violence. Findings of this research indicate that increased stress, decreased social connectedness, and unfair allocation of resources in relationships may be a mechanism leading to poor health outcomes among victims of IPA. This improves upon previous research findings that increased stress, decreased social connectedness, and decreased access to resources can lead to poor health outcomes in the population (Berkman and Syme 1979; Cassel 1976; Marmot and Wilkinson 1999) because it indicates that these negative outcomes are even more pronounced among victims of IPA.

This further supports research in intimate partner abuse indicating that these negative social factors (increased stress, decreased social connectedness and decreased access to resources) are more pronounced for victims of intimate partner abuse than for the general population (Staggs and Riger 2005), particularly if the victims are female (Brownridge 2009; Houry et al. 2008; Kalmuss and Straus 1982; Stark 2007). Future research should consider that there are indirect health implications of being a victim of IPA. The inherent nature of IPA as a negative social factor makes it a health risk for victims. The higher prevalence of significant findings for females indicates higher overall risk of poor outcomes for female victims of IPA. This recognizes females as a more at-risk group, and as such, females should continue to be the focus of services targeting IPA victims.

Methodological Implications

Conflict Tactics Scale and Research Instruments

The use of feminist conceptualizations is limited due to research instruments used to assess violence and victimization. Using the CTS alone to measure abuse showed

nearly symmetrical results for men and women (research question one), but when the questions from the CTS were combined with measures of other outcomes, the results were asymmetrical. This research supports previous findings that measuring only the physical markers of violence (Smith, Earp, and DeVellis 1995) (as is done in modified CTS from the NSFH data) is inadequate for assessing intimate partner abuse (Kimmel 2002).

It is unknown the extent to which the findings of gender asymmetry in SCV could be strengthened if data included a comprehensive assessment of violence from past partners. The limited availability of information on violence by former partners indicates that women report higher rates of violence victimization and injuries by former partners than by current partners (Tables 4.7, 4.8); so, it would be logical to include a full range of violence assessment questions regarding prior relationships. Unfortunately, the NSFH did not do this. This made it impossible to determine the gender of violence perpetrators in previous relationships, or to determine if violence was mutual for ex-partners. Future research should include similar assessments of violence from previous and current partners to allow for a better understanding of violence from previous partners of respondents.

Future research should assess a full range of violence measures in examining gender differences in situational couple violence. The CTS does not include a comprehensive measure of sexual violence, violence motivations or methods of nonviolent abuse or control among couples experiencing situational couple violence. Until the CTS includes these measures, it will be inadequate in assessing gender symmetry.

Furthermore, future research should examine the validity of the "verbal aggression" measure used in the NSFH or other similar research. The NSFH only asks if a couple "argued heatedly" or "shouted" as verbal aggression measures (Bumpass and Sweet 2003). The full version of the CTS (Straus 1979) includes a better assessment of verbal aggression than what is included in the NSFH. The NSFH asked a much more comprehensive list of questions; these included assessment of insulting, yelling, and swearing in addition to arguing heatedly or shouting. Researchers should take care not to simplify a research tool to a point that it is no longer useful in measuring the issue at hand.

By making conceptual and methodological improvements, as outlined in this dissertation, to future research of IPA, researchers will develop a more complex understanding of gender asymmetries among couples experiencing SCV. By so doing, perhaps feminist and family violence researchers can more adequately explore situational couple violence and better work toward the common goal of eradicating violence in families. Only through critical analysis of methods and conceptualizations will it be possible to move past the current stalemate in research of abusive relationships.

Theoretical Implications

This research does not support family violence theory, which theorizes that violence (not gender) is the primary factor in abusive relationships (Dutton 2006; Straus et al. 2006). Instead, it became evident through contextualization, that gender primarily determined outcomes. There was no evidence that men and women experience similar violence outcomes. Social learning theory, and intergenerational transmission of violence, which family violence theorists often

use, could not be examined in this study. However, results do not show support for culture of violence theory, which is also used by family violence researchers. If it were the case that violent societies elicit violence in units of society (including families), then we would have expected to see higher prevalence of partner violence in the population. As was previously noted, there are no known subcultures that value violence, so the argument that violence among minority groups or the poor is unfounded (Ball-Rokeach 1973). The portions of the sample and population who experienced violence were very low, which does not support the theory homes experienced violence on basis of a violent culture or society.

Feminist researchers primarily use feminist theories of violence (sometimes thought of as a subcategory in "conflict theory") and resources theories to explain violence in homes. This research supports and strengthens the feminist theoretical argument that gender is the central risk factor for IPA victimization by showing that gender affects outcomes, even in situational couple violence, which previous researchers assumed was nongendered. Perhaps in a gender-neutral world, violence would equally affect men and women. However, because society is not gender-neutral, and violence cannot be gender symmetrical. "Gender" is too complex to analyze only as a count of violence reports by males or females. In the context of the social system, a history of male dominance in the home, gendered allocation of resources, and the gendered nature of violence make "gender symmetry" mythical at best.

Historically, law and social training gave men ownership over wives. While there has been a historical movement to allow women equal rights to men in families and

societies, these rights have been legally earned slowly, over decades and centuries, for women while they have been naturally afforded to men (Pleck 2004). Social change and paradigm shifts, to where society views men and women as equals, take much more time than the legal paperwork to grant equal rights. Although women may enjoy many legal rights, there is a lag in enforcement of these rights and equalities, which this research illustrates through the stark gendered differences in outcomes.

For example, women legally have the right to equal pay. Yet, gendered differences in income in the research were astounding; there was indication in the data that female mean income was anywhere close to male income. Although legally, employers cannot deny women equal pay for equal work, female gender socialization toward carework consistently puts females at a financial disadvantage in relationships. This disadvantage carries over into higher stress for women in violent relationships, and an unfair allocation of resources (or spending of money) in the relationship – both of which were present in research outcomes. When resource access is unfair, women do not have the same ability to leave a violent partner as do men. Future research should employ relative resource theory and gendered resource theory to assess the ways that female resources relative to male resources may influence outcomes, and to assess the differences that gender ideologies play in resource allocation in violent relationships.

Finally, the gendered nature of violence makes an environment where SCV cannot be gender symmetrical because of socialized pairings, and the gendered nature of violence. Socialized gender pairings place women in the hands of men who are physically larger, older, and have more education or income (Collins and Coltrane 1995; O'Brien 1971). Physical size and strength differentials could not be examined in this research.

However, male respondents did have higher income and more education than did female partners. Society views and teaches male and female violence differently. Society equates violence with masculinity and considers violence incompatible with femininity (Anderson 2005; Thompson Jr 1991). One researcher states,

> Because popular culture defines violence as 'masculine,' audiences expect, acknowledge, and encourage men's violence as normal behavior. In contrast, audiences may discourage, trivialize, or mock women who engage in violence (Anderson 2005: 857).

These socialized differences in access to violence as a resource (and as an ultimate resource when other resources may lack (Allen and Straus 1980)), illustrate that violence by men and violence by women are two *qualitatively different occurrences*. If men use violence, it works to wield power, control, or coercion over women (Stark 2006), it causes fear (Jacobson and Gottman 1998; Sokoloff and Dupont 2005), and it is perceived as a serious threat. When women use violence, it does not change the course of male violence (Jacobson and Gottman 1998), it does not cause fear (Anderson and Umberson 2001; Houry et al. 2008), and it is not perceived as a serious threat (Anderson 2005).

This research presents strong evidence for the *qualitative differences* in male and female violence. Males exposed to female violence do not experience increased stress, do not suffer poor health outcomes, and do not experience lower social contact. Females, however, experience higher odds of *negative outcomes* to violence exposure in each area. These *unquantifiable differences*, or *contextual differences,* in male and female violence make male violence more powerful, and more harmful, than female violence, as is evidenced in consistent results showing

that females (but not males) experienced poor outcomes when exposed to violence.

The contextual differences in gendered experience with violence also add to current understanding of gender in society and relationships as a whole. Although strides have been made to create a society where the sexes have similar legal rights, gender inequalities still persist (Kimmel 2008). Previous research has focused on linking the negative outcomes of violence to injuries or severe violence, but this research calls for a paradigm shift wherein researchers perceive SCV to be harmful to women because of the ways in which violence interacts with the gendered social system and the gendered family, rather than only through injury. The *context* of SCV *within a gendered system* makes it a danger for women.

Conclusions

Commonly held assumptions of the role of gender in SCV are inadequate for explaining the gender asymmetries uncovered within this research. Previous works assumed that such stark gender differences did not exist among couple experiencing SCV. Although gender in IPA has been the topic of debate for several decades, this research indicates that contextualization of violence within the gendered social system illuminate qualitative and quantitative differences in gendered violence. Females are the primary risk group for experiencing negative outcomes from SCV. Situational couple violence leads to poorer physical health outcomes, depression, fear, increased stress, decreased social connectedness, and decreased access to resources for female victims. While there was limited

evidence of poorer outcomes for violence-exposed males, this evidence was much less consistent and much less apparent than the female outcomes. Future research should continue to assess the gender asymmetries in this SCV with an acknowledgement that implementing methods that allow contextualization of violence are necessary for such research.

By expanding knowledge of the role of gender in SCV, and by identifying mechanisms that lead to negative outcomes for IPA victims, this research adds to existing knowledge of SCV. The findings overwhelmingly identify gender asymmetries in SCV, with females at greatest risk of poor outcomes. This expands the current debate over SCV in IPA by bringing attention to the need of contextualization in research. This research opens the door for future research of SCV by feminist researchers, and calls for reformation of the CTS and other similar research tools.

Furthermore, this research contributes substantially to the body of research on gender differences in society. Findings indicated that within intimate relationships, females continue to experience both health and resource disadvantages compared to male partners. Previous research has indicated that socialized gender roles make women more dependent on marriage and intimate relationships for access to resources(Scott et al. 2002), and this dependency may translate into an inability to leave poor-quality or abusive relationships. The gendered differences in resources access and the overall male advantage in society contribute to and reinforce female disadvantage in relationships. It is not

simply violence, but the gendered nature of violence within a patriarchal social system, that leads to female disadvantage within the study sample.

The research presented in this dissertation successfully met its twofold purpose of determining that situational couple violence is gender asymmetrical, and of furthering the debate over the role of gender in IPA. Implications for improving future research were presented. Implementing the suggestions presented in this research could help both family violence and feminist researchers move toward a better understanding of the role of gender in situational couple violence. This will further strengthen the understanding of gender in society and relationships as a whole.

APPENDIX

SUPPLEMENTARY TABLES

Table A.38
Model Significance Tests for Cross-sectional Analysis of Physical Health. Married ad Cohabiting Respondent Models

Physical Health		WAVE 1		WAVE 2		WAVE 3	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Verbal Aggression	204.86 (***)	10.16	179.48 (***)	4.48	119.58 (***)	5.52
	Hitting or Throwing	204.15 (***)	15.11 (^)	179.50 (***)	5.19	119.57 (***)	8.98
	Arguments got Physical	204.39 (***)	12.78	179.79 (***)	4.53	123.12 (***)	5.19
	Primary Respondent physically violent	204.32 (***)	14.31 (^)	179.48 (***)	3.53	120.03 (***)	7.68
	Partner / Spouse Physically Violent	204.21 (***)	16.15 (*)	179.48 (***)	4.92	121.84 (***)	7.16
Female	Verbal Aggression	178.21 (***)	13.64 ^	172.56 (***)	12.12	162.27 (***)	9.06
	Hitting or Throwing	199.10 (***)	15.53 (*)	176.49 (***)	5.20	161.45 (***)	8.58
	Arguments got Physical	192.98 (***)	9.78	172.71 (***)	6.68	158.12 (***)	6.78
	Primary Respondent physically violent	188.87 (***)	11.35	172.33 (***)	8.95	158.25 (***)	10.10
	Partner / Spouse Physically Violent	188.88 (***)	9.66	173.61 (***)	6.76	158.41 (***)	9.61

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A. 39
Model Testing: Full Sample Models of Cross-sectional Data

Physical Health Outcomes : All Relationship Types		WAVE 1		WAVE 2		WAVE 3	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Arguments got Physical	58.27 (***)	9.08	189.29 (***)	3.39	97.31 (***)	4.44
Female	Arguments got Physical	277.76 (***)	11.42	189.29 (***)	3.39	119.47 (***)	14.42 (^)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.40
Physical Health Wave 1: Logistic Regression. Outcome Modeled is Odds of having good health or better. Results of Married and Cohabiting Respondents

	MALE (N =2892)				FEMALE (N =3460)			
Phys. Health	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	-0.10		0.91	0.11	-0.05		0.95	0.10
Age	-0.02	***	0.98	0.00	-0.01	*	0.99	0.00
White	0.07		1.07	0.12	0.32	**	1.37	0.11
Years Education	0.13	***	1.14	0.02	0.16	***	1.17	0.02
Annual Income	0.00	***	1.00	0.00	0.00	***	1.00	0.00
Income Missing - replaced mean	0.09		1.09	0.19	-0.03		0.97	0.19
Constant	0.34		1.40	0.30	-0.54	^	0.58	0.28
Hitting or Throwing	0.05		1.05	0.17	-0.63	***	0.53	0.13
Age	-0.02	***	0.98	0.00	-0.01	**	0.99	0.00
White	0.06		1.07	0.12	0.34	**	1.41	0.10
Years Education	0.13	***	1.14	0.02	0.15	***	1.16	0.02
Annual Income	0.00	***	1.00	0.00	0.00	***	1.00	0.00
Income Missing - replaced mean	0.10		1.10	0.19	-0.04		0.96	0.19
Constant	0.29		1.34	0.30	-0.35		0.71	0.28
Arguments got Physical	-0.10		0.91	0.18	-0.57	***	0.57	0.14
Age	-0.02	***	0.98	0.00	-0.01	**	0.99	0.00
White	0.07		1.07	0.12	0.32	**	1.38	0.10
Years Education	0.13	***	1.14	0.02	0.16	***	1.17	0.02
Annual Income	0.00	***	1.00	0.00	0.00	***	1.00	0.00
Income Missing - replaced mean	0.09		1.10	0.19	-0.03		0.97	0.19
Constant	0.33		1.39	0.30	-0.44		0.65	0.28
Primary Respondent Physically Violent	-0.10		0.90	0.21	-0.58	**	0.56	0.17
Age	-0.02	***	0.98	0.00	-0.01	**	0.99	0.00
White	0.06		1.07	0.12	0.32	**	1.38	0.10
Years Education	0.13	***	1.14	0.02	0.16	***	1.17	0.02
Annual Income	0.00	***	1.00	0.00	0.00	***	1.00	0.00
Income Missing - replaced mean	0.09		1.10	0.19	-0.03		0.97	0.19
Constant	0.33		1.39	0.30	-0.46	^	0.63	0.28
Partner / Spouse Physically Violent	0.08		1.08	0.22	-0.61	**	0.55	0.18
Age	-0.02	***	0.98	0.00	-0.01	**	0.99	0.00
White	0.06		1.07	0.12	0.32	**	1.38	0.10
Years Education	0.13	***	1.14	0.02	0.16	***	1.17	0.02
Annual Income	0.00	***	1.00	0.00	0.00	***	1.00	0.00
Income Missing - replaced mean	0.10		1.11	0.19	-0.03		0.97	0.19
Constant	0.29		1.34	0.30	-0.45	^	0.63	0.28

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.41
Physical Health Wave 2: Logistic Regression. Outcome modeled is odds of having good health or better. Married and Cohabiting Respondents

	MALE (N = 2997)				FEMALE (N =3721)			
Phys. Health	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.00		1.00	0.10	-0.05		0.95	0.09
Age	-0.01	**	0.99	0.00	-0.01	**	0.99	0.00
White	-0.15		0.86	0.12	0.39	***	1.47	0.09
Years Education	0.12	***	1.13	0.02	0.12	***	1.13	0.02
Annual Income	0.00	^	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.62	***	0.54	0.11	-0.45	***	0.64	0.09
Constant	0.30		1.35	0.28	0.02		1.02	0.27
Hitting or Throwing	-0.02		0.98	0.16	-0.28	*	0.76	0.13
Age	-0.01	**	0.99	0.00	-0.01	**	0.99	0.00
White	-0.15		0.86	0.12	0.38	***	1.46	0.09
Years Education	0.12	***	1.13	0.02	0.12	***	1.12	0.02
Annual Income	0.00	^	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.63	***	0.54	0.11	-0.44	***	0.64	0.09
Constant	0.31		1.37	0.28	0.09		1.09	0.26
Arguments got Physical	-0.10		0.90	0.18	-0.12		0.89	0.16
Age	-0.01	**	0.99	0.00	-0.01	**	0.99	0.00
White	-0.15		0.86	0.12	0.37	***	1.45	0.09
Years Education	0.12	***	1.13	0.02	0.12	***	1.12	0.02
Annual Income	0.00	^	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.62	***	0.54	0.11	-0.45	***	0.64	0.09
Constant	0.33		1.39	0.28	0.02		1.02	0.26
Primary Respondent Physically Violent	0.00		1.00	0.22	0.07		1.08	0.19
Age	-0.01	**	0.99	0.00	-0.01	**	0.99	0.00
White	-0.15		0.86	0.12	0.38	***	1.46	0.09
Years Education	0.12	***	1.13	0.02	0.12	***	1.13	0.02
Annual Income	0.00	^	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.62	***	0.54	0.11	-0.45	***	0.64	0.09
Constant	0.30		1.35	0.28	-0.03		0.97	0.26
Partner / Spouse physically violent	-0.01		0.99	0.22	-0.23		0.80	0.19
Age	-0.01	**	0.99	0.00	-0.01	**	0.99	0.00
White	-0.15		0.86	0.12	0.38	***	1.46	0.09
Years Education	0.12	***	1.13	0.02	0.12	***	1.12	0.02
Annual Income	0.00	^	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.62	***	0.54	0.11	-0.45	***	0.64	0.09
Constant	0.31		1.36	0.28	0.03		1.04	0.26

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.42
Physical Health Wave 3: Logistic Regression. Outcome Modeled is Odds of Having Good Health or Better. Married and Cohabiting Respondents

	MALE (N = 1348)				FEMALE (N =2144)			
Phys. Health	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	-0.04		0.96	0.13	0.22	*	1.25	0.11
Age	-0.01		0.99	0.01	0.00		1.00	0.01
White	0.49	**	1.63	0.17	0.61	***	1.84	0.12
Years Education	0.13	***	1.14	0.02	0.17	***	1.19	0.02
Annual Income	0.00	**	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.61	***	0.54	0.14	-0.59	***	0.55	0.12
Constant	-0.78		0.46	0.54	-1.39	**	0.25	0.43
Hitting or Throwing	-0.11		0.89	0.39	-0.61	^	0.55	0.31
Age	-0.01		0.99	0.01	0.00		1.00	0.01
White	0.49	**	1.63	0.17	0.64	***	1.90	0.12
Years Education	0.13	***	1.14	0.02	0.18	***	1.20	0.02
Annual Income	0.00	**	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.61	***	0.54	0.14	-0.58	***	0.56	0.12
Constant	-0.80		0.45	0.53	-1.22	**	0.29	0.43
Arguments got Physical	-0.88	^	0.41	0.45	-0.16		0.85	0.34
Age	-0.01		0.99	0.01	0.00		1.00	0.01
White	0.49	**	1.64	0.17	0.64	***	1.89	0.12
Years Education	0.13	***	1.14	0.02	0.18	***	1.19	0.02
Annual Income	0.00	**	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.60	***	0.55	0.14	-0.57	***	0.56	0.12
Constant	-0.75		0.47	0.53	-1.25	**	0.29	0.43
Primary Respondent physically violent	-0.50		0.60	0.67	0.28		1.32	0.48
Age	-0.01		0.99	0.01	0.00		1.00	0.01
White	0.49	**	1.63	0.17	0.64	***	1.89	0.12
Years Education	0.13	***	1.13	0.02	0.18	***	1.19	0.02
Annual Income	0.00	**	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.61	***	0.54	0.14	-0.58	***	0.56	0.12
Constant	-0.79		0.45	0.53	-1.28	**	0.28	0.43
Partner / Spouse physically violent	-0.93		0.40	0.59	-0.39		0.68	0.53
Age	-0.01		0.99	0.01	0.00		1.00	0.01
White	0.49	**	1.64	0.17	0.64	***	1.89	0.12
Years Education	0.13	***	1.14	0.02	0.18	***	1.19	0.02
Annual Income	0.00	**	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.60	***	0.55	0.14	-0.58	***	0.56	0.12
Constant	-0.77		0.46	0.53	-1.25	**	0.29	0.43

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 =

Table A.43
Physical Health: Logistic Regression Models. Outcome Modeled is Odds of Good Health or Better. Full Sample Included

	MALE				FEMALE			
Physical Health Outcomes	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
WAVE 1: Male (n=2686), Female (n= 3915)								
Arguments got Physical	-0.23		0.79	0.15	-0.43	***	0.65	0.10
Age	-0.02	***	0.98	0.00	-0.01	***	0.99	0.00
White	-0.09		0.92	0.13	0.14		1.15	0.10
Years Education	0.13	***	1.14	0.02	0.16	***	1.17	0.02
Annual Income	0.00	***	1.00	0.00	0.00	***	1.00	0.00
Income Missing - replaced mean	0.25		1.28	0.20	-0.11		0.89	0.18
Current Partner	0.40	**	1.49	0.13	0.45	***	1.56	0.09
Constant	0.01		1.01	0.34	-0.68	*	0.50	0.27
WAVE 2: Male (n= 3036), Female (n=4195)								
Arguments got Physical	-0.02		0.98	0.16	-0.11		0.90	0.12
Age	-0.01	**	0.99	0.00	-0.01	*	0.99	0.00
White	-0.14		0.87	0.12	0.16	^	1.18	0.09
Years Education	0.12	***	1.13	0.02	0.12	***	1.13	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.66	***	0.52	0.11	-0.52	***	0.60	0.08
Current Partner	0.01		1.01	0.13	0.40	***	1.49	0.08
Constant	0.57	^	1.77	0.30	-0.22		0.80	0.26
WAVE 3: Male (n=1176), Female (n= 1576)								
Arguments got Physical	-0.30		0.74	0.37	-0.43	^	0.65	0.25
Age	-0.01		0.99	0.01	0.00		1.00	0.01
White	0.59	**	1.81	0.19	0.74	***	2.10	0.16
Years Education	0.12	***	1.13	0.03	0.17	***	1.19	0.03
Annual Income	0.00	**	1.00	0.00	0.00	***	1.00	0.00
Income Missing - replaced mean	-0.47	**	0.63	0.16	-0.81	***	0.45	0.17
Current Partner	0.07		1.07	0.30	0.52	*	1.67	0.23
Constant	-0.63		0.53	0.62	-2.37	***	0.09	0.58

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.44
Model Testing for Panel Data Assessing Physical Health Outcomes – Married and Cohabiting Respondents

Physical Health		Overall Likelihood Ratio Test (Prob. > chi2)		RHO test (Prob. > chibar2)		Wald (Prob. > chi2)	
Male	Verbal Aggression	307.37	(***)	309.09	(***)	239.17	(***)
	Hitting or Throwing	302.80	(***)	309.99	(***)	236.49	(***)
	Arguments got Physical	303.34	(***)	309.50	(***)	236.86	(***)
	Primary Respondent physically violent	302.77	(***)	309.91	(***)	236.45	(***)
	Partner / Spouse Physically Violent	303.03	(***)	310.22	(***)	236.46	(***)
	Any Physical violence at any time in study	190.19	(***)	235.20	(***)	155.91	(***)
	Any Verbal Aggression at Any Time in Study	194.83	(***)	237.51	(***)	150.30	(***)
Female	Verbal Aggression	211.71	(***)	417.23	(***)	187.05	(***)
	Hitting or Throwing	219.65	(***)	405.75	(***)	194.91	(***)
	Arguments got Physical	213.51	(***)	413.62	(***)	189.28	(***)
	Primary Respondent physically violent	210.20	(***)	415.05	(***)	186.36	(***)
	Partner / Spouse Physically Violent	212.72	(***)	414.26	(***)	188.47	(***)
	Any Physical violence at any time in study	137.70	(***)	324.36	(***)	117.58	(***)
	Any Verbal Aggression at Any Time in Study	145.08	(***)	324.13	(***)	124.33	(***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.45
Model Testing for Random Effects Logistic Regression Physical Health Outcome Models:
Panel Data, Full Sample Models

Physical Health Outcomes		Overall Likelihood Ratio Test (Prob. > chi2)		RHO test (Prob. > chibar2)		Wald (Prob. > chi2)	
Male	Arguments got Physical	298.07	(***)	324.97	(***)	267.41	(***)
Female	Arguments got Physical	218.82	(***)	439.72	(***)	293.35	(***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.46
Model Testing for Linear Regression Models Assessing Depression Outcomes. For Married and Cohabiting Respondents only. Using Cross-sectional Data

Depression Model Testing		WAVE 1		WAVE 2		WAVE 3	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Verbal Aggression	89.13 (***)	4.71	24.83 (***)	6.94	28.08 (***)	12.13
	Hitting or Throwing	93.75 (***)	3.36	33.98 (***)	4.76	29.99 (***)	13.25
	Arguments got Physical	97.46 (***)	2.54	32.32 (***)	5.84	37.04 (***)	17.24 (*)
	Primary Respondent physically violent	98.45 (***)	4.97	28.74 (***)	7.91	31.92 (***)	15.66 (*)
	Partner / Spouse Physically Violent	94.68 (***)	4.19	27.90 (***)	6.80	32.31 (***)	13.56 (^)
Female	Verbal Aggression	113.03 (***)	21.16 (**)	90.22 (***)	14.63 ^	55.54 (***)	19.07 (*)
	Hitting or Throwing	122.83 (***)	6.13	97.05 (***)	4.36	61.71 (***)	12.72
	Arguments got Physical	112.59 (***)	7.15	97.67 (***)	7.08	64.08 (***)	13.56 ^
	Primary Respondent physically violent	110.46 (***)	7.88	101.98 (***)	9.05	57.55 (***)	10.64
	Partner / Spouse Physically Violent	112.47 (***)	6.86	98.29 (***)	6.68	55.59 (***)	10.94

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A. 47
Model Testing for Linear Regression Models Assessing Depression Outcomes.
For Full Sample. Using Cross-sectional Data

Depression : All Relationship Types		WAVE 1		WAVE 2		WAVE 3	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Arguments got Physical	277.76 (***)	11.42	71.05 (***)	5.57	39.12 (***)	8.29
Female	Arguments got Physical	150.22 (***)	13.88 (^)	71.05 (***)	5.57	51.32 (***)	12.05

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.48
Cross-Sectional Analysis of Depression Wave 1: Logistic Regression Models. Married or Cohabiting Respondents. Modeled Outcome is "Depressed One or More Days."

	MALE (N = 2990				FEMALE (N = 3585)			
Depression	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	-0.03		0.97	0.08	0.27	***	1.31	0.07
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.10		1.11	0.09	-0.20	*	0.82	0.08
Years Education	-0.03	*	0.97	0.01	-0.04	**	0.96	0.01
Annual Income	0.00	*	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.16		0.85	0.13	-0.18		0.83	0.14
Constant	1.16	***	3.18	0.22	1.70	***	5.46	0.22
Hitting or Throwing	0.26	*	1.29	0.12	0.57	***	1.77	0.12
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.10		1.10	0.09	-0.16	*	0.85	0.08
Years Education	-0.03	*	0.97	0.01	-0.04	**	0.96	0.01
Annual Income	0.00	**	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.15		0.86	0.13	-0.18		0.83	0.14
Constant	1.07	***	2.91	0.22	1.63	***	5.12	0.22
Arguments got Physical	0.38	**	1.46	0.13	0.46	***	1.58	0.12
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.09		1.10	0.09	-0.15	^	0.86	0.08
Years Education	-0.03	*	0.97	0.01	-0.04	**	0.96	0.01
Annual Income	0.00	*	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.14		0.87	0.13	-0.20		0.82	0.14
Constant	1.05	***	2.87	0.22	1.71	***	5.54	0.22
Primary Respondent physically violent	0.48	**	1.62	0.16	0.50	**	1.65	0.15
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.10		1.11	0.09	-0.15	^	0.86	0.08
Years Education	-0.03	*	0.97	0.01	-0.04	**	0.96	0.01
Annual Income	0.00	*	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.14		0.87	0.13	-0.19		0.82	0.14
Constant	1.04	***	2.84	0.22	1.72	***	5.59	0.22
Partner / Spouse physically violent	0.36	*	1.43	0.15	0.58	***	1.78	0.16
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.10		1.10	0.09	-0.15	^	0.86	0.08
Years Education	-0.03	*	0.97	0.01	-0.04	**	0.96	0.01
Annual Income	0.00	*	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.14		0.87	0.13	-0.19		0.83	0.14
Constant	1.07	***	2.91	0.22	1.72	***	5.56	0.22

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.49
Cross-Sectional Analysis of Depression -Wave 2: Logistic regression models. Married or Cohabiting Respondents. Outcome Modeled is "Depressed One or More Days."

	MALE (N =2986)				FEMALE (N =3700			
Depression	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.10		1.11	0.08	0.27	***	1.31	0.07
Age	-0.01	**	0.99	0.00	-0.01	***	0.99	0.00
White	0.04		1.04	0.09	-0.24	**	0.78	0.08
Years Education	-0.01		0.99	0.01	-0.07	***	0.93	0.01
Annual Income	0.00	*	1.00	0.00	0.00	**	1.00	0.00
Income Missing - replaced mean	-0.01		0.99	0.09	-0.04		0.96	0.08
Constant	0.37		1.45	0.23	1.72	***	5.61	0.23
Hitting or Throwing	0.41	**	1.51	0.12	0.53	***	1.70	0.12
Age	-0.01	**	0.99	0.00	-0.01	***	0.99	0.00
White	0.05		1.05	0.09	-0.19	*	0.83	0.08
Years Education	-0.01		0.99	0.01	-0.06	***	0.94	0.01
Annual Income	0.00	*	1.00	0.00	0.00	**	1.00	0.00
Income Missing - replaced mean	-0.01		0.99	0.09	-0.05		0.95	0.08
Constant	0.30		1.35	0.23	1.72	***	5.61	0.23
Arguments got Physical	0.45	**	1.56	0.15	0.64	***	1.90	0.15
Age	-0.01	**	0.99	0.00	-0.01	***	0.99	0.00
White	0.05		1.05	0.09	-0.18	*	0.83	0.08
Years Education	-0.01		0.99	0.01	-0.06	***	0.94	0.01
Annual Income	0.00	*	1.00	0.00	0.00	**	1.00	0.00
Income Missing - replaced mean	-0.01		0.99	0.09	-0.04		0.96	0.08
Constant	0.34		1.40	0.23	1.74	***	5.72	0.22
Primary Respondent physically violent	0.40	*	1.49	0.17	0.82	***	2.26	0.17
Age	-0.01	**	0.99	0.00	-0.01	***	0.99	0.00
White	0.05		1.05	0.09	-0.18	*	0.84	0.08
Years Education	-0.01		0.99	0.01	-0.07	***	0.94	0.01
Annual Income	0.00	*	1.00	0.00	0.00	**	1.00	0.00
Income Missing - replaced mean	-0.01		0.99	0.09	-0.04		0.96	0.08
Constant	0.37		1.44	0.23	1.74	***	5.72	0.22
Partner / Spouse physically violent	0.37	*	1.45	0.17	0.80	***	2.21	0.18
Age	-0.01	**	0.99	0.00	-0.01	***	0.99	0.00
White	0.05		1.05	0.09	-0.19	*	0.83	0.08
Years Education	-0.01		0.99	0.01	-0.07	***	0.94	0.01
Annual Income	0.00	*	1.00	0.00	0.00	**	1.00	0.00
Income Missing - replaced mean	-0.01		0.99	0.09	-0.04		0.96	0.08
Constant	0.36		1.44	0.23	1.76	***	5.79	0.22

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.50
Cross-Sectional Analysis of depression Wave 3: Logistic regression models. For Married or Cohabiting Respondents. Outcome Modeled is "Depressed One or More Days."

	MALE (N = 1345)				FEMALE (N =2134)			
Depression	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.10		1.11	0.12	0.20	*	1.22	0.09
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.01
White	-0.35	*	0.70	0.17	-0.43	***	0.65	0.11
Years Education	-0.07	**	0.93	0.02	-0.05	*	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.12		1.13	0.14	0.31	**	1.37	0.11
Constant	0.95	^	2.58	0.50	1.47	***	4.33	0.37
Hitting or Throwing	0.57	^	1.77	0.35	0.93	**	2.54	0.29
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.00
White	-0.33	*	0.72	0.17	-0.41	***	0.67	0.11
Years Education	-0.07	**	0.93	0.02	-0.05	*	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.12		1.12	0.14	0.33	**	1.39	0.11
Constant	0.99	*	2.70	0.49	1.52	***	4.56	0.37
Arguments got Physical	1.37	**	3.95	0.45	1.11	***	3.05	0.32
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.00
White	-0.36	*	0.70	0.17	-0.40	***	0.67	0.11
Years Education	-0.07	**	0.93	0.02	-0.04	*	0.96	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.11		1.12	0.14	0.32	**	1.38	0.11
Constant	0.94	^	2.57	0.49	1.50	***	4.48	0.37
Primary Respondent physically violent	1.33	*	3.78	0.64	0.99	*	2.68	0.39
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.00
White	-0.35	*	0.71	0.17	-0.41	***	0.66	0.11
Years Education	-0.07	**	0.93	0.02	-0.04	*	0.96	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.12		1.13	0.14	0.33	**	1.38	0.11
Constant	0.97	*	2.64	0.49	1.53	***	4.60	0.37
Partner / Spouse physically violent	1.27	*	3.56	0.58	1.02	*	2.79	0.49
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.00
White	-0.35	*	0.70	0.17	-0.40	***	0.67	0.11
Years Education	-0.07	**	0.93	0.02	-0.05	*	0.95	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.11		1.11	0.14	0.33	**	1.39	0.11
Constant	0.97	*	2.65	0.49	1.55	***	4.72	0.37

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.51
Cross-Sectional Analysis of depression: Logistic regression models. Full Sample Included. Outcome Modeled is "Depressed One or More Days."

	MALE				FEMALE			
Depression	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
WAVE 1: Male (n= 2779), Female (n=4054)								
Arguments got Physical	0.41	***	1.51	0.12	0.48	***	1.61	0.09
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	0.14		1.14	0.10	0.05		1.05	0.08
Years Education	-0.04	**	0.96	0.01	-0.05	***	0.95	0.01
Annual Income	0.00	*	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.08		0.92	0.14	-0.15		0.86	0.14
Current Partner	-0.52	***	0.59	0.10	-0.46	***	0.63	0.07
Constant	1.40	***	4.07	0.26	1.85	***	6.35	0.22
WAVE 2: Male (n= 3023), Female (n= 4167)								
Arguments got Physical	0.41	**	1.50	0.13	0.46	***	1.58	0.11
Age	-0.01	**	0.99	0.00	-0.01	***	0.99	0.00
White	0.10		1.10	0.09	-0.01		0.99	0.08
Years Education	-0.01		0.99	0.01	-0.05	***	0.95	0.01
Annual Income	0.00	*	1.00	0.00	0.00	**	1.00	0.00
Income Missing - replaced mean	0.10		1.11	0.09	0.02		1.02	0.07
Current Partner	-0.63	***	0.53	0.10	-0.44	***	0.64	0.08
Constant	0.85	**	2.35	0.25	1.72	***	5.56	0.23
WAVE 3: Male (n= 1173), Female (n= 1569)								
Arguments got Physical	1.26	***	3.52	0.34	0.70	**	2.02	0.22
Age	-0.01		0.99	0.01	-0.02	**	0.98	0.01
White	-0.47	*	0.62	0.18	-0.27	^	0.77	0.15
Years Education	-0.05	*	0.95	0.02	-0.02		0.98	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.05		1.05	0.15	0.31	*	1.36	0.13
Current Partner	-0.20		0.81	0.27	-0.77	***	0.46	0.20
Constant	0.92		2.50	0.57	1.51	**	4.53	0.48

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.52
Model Testing of Random Effects Logistic Regression Depression Models. Married and Cohabiting Respondents Only.

Depression Model Testing		Overall LR Test (Prob. > chi2)	RHO test (Prob. > chibar2)	Wald (Prob. > chi2)
Male	Verbal Aggression	109.76 (***)	217.87 (***)	102.56 (***)
	Hitting or Throwing	105.20 (***)	98.81 (***)	222.82 (***)
	Arguments got Physical	104.69 (***)	98.44 (***)	221.05 (***)
	Primary Respondent physically violent	98.81 (***)	93.10 (***)	221.22 (***)
	Partner / Spouse Physically Violent	97.07 (***)	222.46 (***)	91.40 (***)
	Any Physical violence at any time in study	79.43 (***)	158.10 (***)	73.87 (***)
	Any Verbal Aggression at Any Time in Study	78.53 (***)	158.46 (***)	73.03 (***)
Female	Verbal Aggression	220.18 (***)	250.87 (***)	201.68 (***)
	Hitting or Throwing	184.94 (***)	259.38 (***)	170.75 (***)
	Arguments got Physical	174.44 (***)	262.59 (***)	161.62 (***)
	Primary Respondent physically violent	176.81 (***)	264.89 (***)	162.65 (***)
	Partner / Spouse Physically Violent	167.01 (***)	154.81 (***)	264.58 (***)
	Any Physical violence at any time in study	128.03 (***)	117.51 (***)	195.73 (***)
	Any Verbal Aggression at Any Time in Study	124.93 (***)	114.58 (***)	199.09 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.53
Model Testing of Random Effects Logistic Regression Depression Models. Full Sample

Depression Model Testing		Overall Likelihood Ratio Test (Prob. > chi2)	RHO test (Prob. > chibar2)	Wald (Prob. > chi2)
Male	Arguments got Physical	112.37 (***)	219.29	181.52 (***)
Female	Arguments got Physical	205.64 (***)	264.59 (***)	317.43 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.54
Model Testing of Cross-Sectional Logistic Regression Fear Models. Married and Cohabiting Respondents Only

Fear Model Testing		WAVE 1		WAVE 2		WAVE 3	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Verbal Aggression	52.07 (***)	9.26	24.98 (***)	5.09	27.88 (***)	10.64
	Hitting or Throwing	53.63 (***)	7.40	31.33 (***)	5.99	31.16 (***)	9.48
	Arguments got Physical	56.17 (***)	8.58	28.14 (***)	9.40	28.64 (***)	10.31
	Primary Respondent physically violent	55.54 (***)	12.96	25.15 (***)	7.72	25.83 (***)	11.53
	Partner / Spouse Physically Violent	53.24 (***)	9.51	26.30 (***)	5.93 (***)	29.19 (***)	12.11
Female	Verbal Aggression	76.23 (***)	3.83	67.70 (***)	3.52	64.96 (***)	13.21
	Hitting or Throwing	84.51 (***)	13.38 ^	90.21 (***)	12.53	77.34 (***)	12.72
	Arguments got Physical	88.95 (***)	9.90	93.60 (***)	13.88 ^	74.41 (***)	11.45
	Primary Respondent physically violent	88.15 (***)	13.76 ^	93.64 (***)	17.29 (*)	73.35 (***)	11.62
	Partner / Spouse Physically Violent	83.47 (***)	9.73	96.42 (***)	18.60 (*)	67.79 (***)	13.21

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.55
Model Testing of Cross-Sectional Logistic Regression Fear Models. Full Sample

Model Testing FEAR: All Relationship Types		Wave 1		Wave 2		Wave 3	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Arguments got Physical	150.22 (***)	13.88 ^	56.79 (***)	12.46	24.60 (***)	11.21
Female	Arguments got Physical	112.24 (***)	7.36	56.79 (***)	12.46	63.21 (***)	5.26

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.56
Cross-sectional Analysis of Fear - Wave 1: For Married and Cohabiting Respondents.
Outcome modeled is "Odds of Experiencing Fear One or More Days."

	MALE (n=2981)				FEMALE (n=4036)			
Fear	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.00		1.00	0.09	0.19	*	1.21	0.08
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.19	^	0.82	0.11	-0.39	***	0.68	0.09
Years Education	-0.02		0.98	0.02	-0.03	^	0.98	0.02
Annual Income	0.00		1.00	0.00	0.00	*	1.00	0.00
Income Missing - replaced mean	-0.09		0.92	0.16	-0.01		0.99	0.15
Constant	0.14		1.15	0.26	0.42	^	1.53	0.23
Hitting or Throwing	0.17		1.18	0.13	0.43	***	1.54	0.11
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.19	^	0.82	0.10	-0.36	***	0.70	0.08
Years Education	-0.02		0.98	0.02	-0.02		0.98	0.02
Annual Income	0.00		1.00	0.00	0.00	^	1.00	0.00
Income Missing - replaced mean	-0.08		0.92	0.16	-0.01		0.99	0.15
Constant	0.09		1.09	0.26	0.35		1.42	0.23
Arguments got Physical	0.29	*	1.34	0.14	0.53	***	1.69	0.12
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.20	^	0.82	0.10	-0.36	***	0.70	0.08
Years Education	-0.02		0.98	0.02	-0.02		0.98	0.02
Annual Income	0.00		1.00	0.00	0.00	*	1.00	0.00
Income Missing - replaced mean	-0.07		0.93	0.16	-0.02		0.98	0.15
Constant	0.06		1.06	0.26	0.38	^	1.47	0.23
Primary Respondent physically violent	0.31	^	1.37	0.17	0.61	***	1.84	0.14
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.19	^	0.83	0.10	-0.36	***	0.70	0.08
Years Education	-0.02		0.98	0.02	-0.02		0.98	0.02
Annual Income	0.00		1.00	0.00	0.00	*	1.00	0.00
Income Missing - replaced mean	-0.07		0.93	0.16	-0.02		0.98	0.15
Constant	0.06		1.07	0.26	0.39	^	1.48	0.23
Partner / Spouse physically violent	0.18		1.19	0.16	0.55	***	1.73	0.15
Age	-0.02	***	0.98	0.00	-0.02	***	0.98	0.00
White	-0.19	^	0.82	0.10	-0.36	***	0.70	0.08
Years Education	-0.02		0.98	0.02	-0.02		0.98	0.02
Annual Income	0.00		1.00	0.00	0.00	^	1.00	0.00
Income Missing - replaced mean	-0.07		0.93	0.16	-0.02		0.98	0.15
Constant	0.10		1.10	0.26	0.41	^	1.50	0.23

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.57
Cross-sectional Analysis Fear - Wave 2: For Married and Cohabiting Respondents.
Outcome modeled is "Odds of Experiencing Fear One or More Days."

	MALE (N = 2984)				FEMALE (N =3691)			
Fear	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.28	^	1.32	0.16	0.15	^	1.17	0.08
Age	-0.01		0.99	0.01	-0.01	***	0.99	0.00
White	-0.58	**	0.56	0.19	-0.32	***	0.73	0.08
Years Education	-0.08	**	0.92	0.03	-0.05	***	0.95	0.01
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.26		1.30	0.17	0.24	**	1.27	0.08
Constant	0.09		1.10	0.62	0.57	*	1.77	0.24
Hitting or Throwing	1.01	**	2.74	0.37	0.59	***	1.81	0.11
Age	-0.01		0.99	0.01	-0.01	**	0.99	0.00
White	-0.54	**	0.58	0.19	-0.29	***	0.75	0.08
Years Education	-0.08	**	0.92	0.03	-0.05	**	0.95	0.01
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.26		1.30	0.17	0.23	**	1.26	0.08
Constant	0.27		1.31	0.61	0.46	^	1.58	0.24
Arguments got Physical	1.02	*	2.76	0.47	0.74	***	2.10	0.13
Age	-0.01		0.99	0.01	-0.01	**	0.99	0.00
White	-0.58	**	0.56	0.19	-0.28	**	0.75	0.08
Years Education	-0.08	**	0.92	0.03	-0.05	**	0.95	0.01
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.26		1.29	0.17	0.24	**	1.28	0.08
Constant	0.26		1.30	0.61	0.47	*	1.60	0.24
Primary Respondent physically violent	0.82		2.28	0.70	0.83	***	2.30	0.15
Age	-0.01		0.99	0.01	-0.01	**	0.99	0.00
White	-0.57	**	0.57	0.19	-0.28	**	0.76	0.08
Years Education	-0.08	**	0.92	0.03	-0.05	**	0.95	0.01
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.26		1.30	0.17	0.24	**	1.27	0.08
Constant	0.29		1.34	0.61	0.49	*	1.63	0.24
Partner / Spouse physically violent	1.37	*	3.92	0.60	0.92	***	2.50	0.16
Age	-0.01		0.99	0.01	-0.01	**	0.99	0.00
White	-0.58	**	0.56	0.19	-0.29	***	0.75	0.08
Years Education	-0.08	**	0.92	0.03	-0.05	**	0.95	0.01
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.24		1.28	0.17	0.24	**	1.27	0.08
Constant	0.27		1.31	0.61	0.48	*	1.61	0.24

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.58
Cross-sectional Analysis of NSFH Waves: Fear Wave 3: For Married and Cohabiting Respondents. Outcome modeled is "Odds of Experiencing Fear One or More Days."

	MALE (N = 1343)				FEMALE (N = 2142)			
Fear	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.28	^	1.32	0.16	0.02		1.02	0.11
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.01
White	-0.58	**	0.56	0.19	-0.68	***	0.51	0.12
Years Education	-0.08	**	0.92	0.03	-0.04	^	0.96	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.26		1.30	0.17	0.39	**	1.47	0.12
Constant	0.09		1.10	0.62	0.98	*	2.67	0.42
Hitting or Throwing	1.01	**	2.74	0.37	1.05	***	2.85	0.29
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.01
White	-0.54	**	0.58	0.19	-0.68	***	0.51	0.12
Years Education	-0.08	**	0.92	0.03	-0.04	^	0.96	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.26		1.30	0.17	0.39	**	1.48	0.12
Constant	0.27		1.31	0.61	0.91	*	2.49	0.42
Arguments got Physical	1.02	*	2.76	0.47	0.97	**	2.63	0.31
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.01
White	-0.58	**	0.56	0.19	-0.68	***	0.51	0.12
Years Education	-0.08	**	0.92	0.03	-0.04	^	0.96	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.26		1.29	0.17	0.38	**	1.47	0.12
Constant	0.26		1.30	0.61	0.91	*	2.49	0.42
Primary Respondent physically violent	0.82		2.28	0.70	1.15	**	3.16	0.38
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.01
White	-0.57	**	0.57	0.19	-0.68	***	0.51	0.12
Years Education	-0.08	**	0.92	0.03	-0.04	^	0.96	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.26		1.30	0.17	0.39	**	1.47	0.12
Constant	0.29		1.34	0.61	0.92	*	2.51	0.42
Partner / Spouse physically violent	1.37	*	3.92	0.60	0.84	^	2.33	0.48
Age	-0.01		0.99	0.01	-0.02	***	0.98	0.01
White	-0.58	**	0.56	0.19	-0.67	***	0.51	0.12
Years Education	-0.08	**	0.92	0.03	-0.04	^	0.96	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.24		1.28	0.17	0.39	**	1.47	0.12
Constant	0.27		1.31	0.61	0.96	*	2.62	0.42

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.59
Cross-sectional Analysis of NSFH Waves: Fear - Full Sample Included. Outcome Modeled is "Odds of Experiencing Fear One or More Days."

	MALE				FEMALE			
Fear	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
WAVE 1: Male (n=2771), Female (n=3570)								
Arguments got Physical	0.30	*	1.36	0.13	0.52	***	1.68	0.09
Age	-0.02	***	0.98	0.00	-0.01	***	0.99	0.00
White	-0.23	*	0.80	0.11	-0.25	**	0.78	0.08
Years Education	-0.02		0.98	0.02	-0.03	*	0.97	0.01
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.10		0.91	0.17	0.04		1.04	0.15
Current Partner	-0.21	^	0.81	0.12	-0.38	***	0.68	0.07
Constant	0.17		1.18	0.30	0.43	^	1.53	0.23
WAVE 2: Male (n= 3025), Female (n= 4170)								
Arguments got Physical	0.39	**	1.48	0.13	0.65	***	1.91	0.10
Age	-0.01	^	0.99	0.00	0.00		1.00	0.00
White	-0.22	*	0.81	0.10	-0.20	*	0.82	0.08
Years Education	-0.03	*	0.97	0.02	-0.04	**	0.96	0.01
Annual Income	0.00	**	1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.09		1.10	0.10	0.24	**	1.27	0.08
Current Partner	-0.35	**	0.71	0.11	-0.52	***	0.59	0.08
Constant	0.25		1.28	0.28	0.49	*	1.63	0.23
WAVE 3: Male (n= 1170), Female (n= 1573)								
Arguments got Physical	0.80	*	2.22	0.38	0.67	**	1.96	0.23
Age	-0.02	*	0.98	0.01	-0.02	**	0.98	0.01
White	-0.54	*	0.58	0.21	-0.81	***	0.44	0.16
Years Education	-0.07	*	0.93	0.03	-0.03		0.97	0.03
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.32	^	1.38	0.18	0.37	*	1.45	0.15
Current Partner	0.19		1.21	0.34	-0.40	^	0.67	0.22
Constant	0.30		1.35	0.71	1.41	*	4.08	0.56

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.60:
Model Testing Random Effects Logistic Regression Models for Fear Outcomes – Married and Cohabiting Respondents Only

Fear: Model Testing		Overall Likelihood Ratio Test (Prob. > chi2)		RHO test (Prob. > chibar2)		Wald (Prob. > chi2)	
Male	Verbal Aggression	81.22	(***)	130.88	(***)	76.26	(***)
	Hitting or Throwing	81.59	(***)	130.88	(***)	77.84	(***)
	Arguments got Physical	82.10	(***)	129.09	(***)	78.67	(***)
	Primary Respondent physically violent	76.57	(***)	131.44	(***)	73.09	(***)
	Partner / Spouse Physically Violent	76.70	(***)	130.33	(***)	73.41	(***)
	Any Physical violence at any time in study	60.10	(***)	115.19	(***)	56.70	(***)
	Any Verbal Aggression at Any Time in Study	58.99	(***)	115.94	(***)	55.67	(***)
Female	Verbal Aggression	121.05	(***)	209.53	(***)	114.72	(***)
	Hitting or Throwing	123.08	(***)	209.72	(***)	118.98	(***)
	Arguments got Physical	126.75	(***)	215.05	(***)	121.34	(***)
	Primary Respondent physically violent	129.22	(***)	213.37	(***)	123.64	(***)
	Partner / Spouse Physically Violent	112.28	(***)	212.44	(***)	108.39	(***)
	Any Physical violence at any time in study	73.57	(***)	163.58	(***)	70.49	(***)
	Any Verbal Aggression at Any Time in Study	68.63	(***)	167.09	(***)	65.82	(***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.61
Model Testing Random Effects Logistic Regression Models for Fear Outcomes Full Sample

Fear Model Testing		Overall Likelihood Ratio Test (Prob. > chi2)		RHO test (Prob. > chibar2)		Wald (Prob. > chi2)	
Male	Arguments got Physical	79.94	(***)	134.02	(***)	107.05	(***)
Female	Arguments got Physical	142.48	(***)	232.93	(***)	256.15	(***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.62
Model Testing of Logistic Regression Stress Models
For Married and Cohabiting Respondents Only

Model Testing: Stress		WAVE 1		WAVE 2	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Verbal Aggression	44.35 (***)	12.63	17.53 (**)	13.44 (^)
	Hitting or Throwing	41.62 (***)	17.17 (*)	21.03 (**)	16.80 (*)
	Arguments got Physical	42.31 (***)	16.89 (*)	18.13 (**)	14.39 (^)
	Primary Respondent physically violent	41.55 (***)	15.87 (*)	18.00 (**)	13.26
	Partner / Spouse Physically Violent	41.57 (***)	14.98 (^)	17.29 (**)	19.28 (*)
Female	Verbal Aggression	53.91 (***)	11.08	90.49 (***)	8.35
	Hitting or Throwing	45.39 (***)	3.34	96.19 (***)	3.91
	Arguments got Physical	45.41 (***)	1.96	99.70 (***)	4.64
	Primary Respondent physically violent	46.20 (***)	4.88	102.79 (***)	6.27
	Partner / Spouse Physically Violent	45.44 (***)	3.26	98.86 (***)	5.80

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.63
Model Testing of Logistic Regression Stress Models – For Full Models

Stress : All Relationship Types		WAVE 1		WAVE 2	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Arguments got Physical	112.24 (***)	7.36	35.93 (***)	10.74
Female	Arguments got Physical	58.27 (***)	9.08	35.93 (***)	10.74

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.64
Cross-sectional Analysis of Stress - Wave 1: Married and Cohabiting Respondents.
Logistic Regression Models. Outcome Modeled is Odds of Experiencing Stress

	MALE (N =2856)				FEMALE (N = 3428)			
House Stress	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.24	^	1.27	0.14	-0.38	**	0.69	0.13
Age	0.01		1.01	0.01	0.00		1.00	0.01
White	-0.57	***	0.56	0.15	-0.40	**	0.67	0.14
Years Education	-0.08	**	0.92	0.02	-0.10	***	0.91	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.03		1.03	0.24	-0.29		0.75	0.28
Constant	-1.29	**	0.27	0.39	-0.51		0.60	0.37
Hitting or Throwing	-0.06		0.95	0.21	0.00		1.00	0.20
Age	0.01		1.01	0.01	0.00		1.00	0.01
White	-0.55	***	0.58	0.15	-0.50	***	0.61	0.14
Years Education	-0.08	**	0.92	0.02	-0.10	***	0.91	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.01		1.01	0.24	-0.26		0.77	0.28
Constant	-1.20	**	0.30	0.39	-0.64	^	0.53	0.37
Arguments got Physical	0.19		1.21	0.22	0.03		1.03	0.21
Age	0.01	^	1.01	0.01	0.00		1.00	0.01
White	-0.56	***	0.57	0.15	-0.50	***	0.61	0.14
Years Education	-0.08	**	0.92	0.02	-0.10	***	0.91	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.02		1.02	0.24	-0.26		0.77	0.28
Constant	-1.26	**	0.28	0.39	-0.64	^	0.53	0.37
Primary Respondent physically violent	0.01		1.01	0.28	-0.25		0.78	0.29
Age	0.01	^	1.01	0.01	0.00		1.00	0.01
White	-0.55	***	0.58	0.15	-0.49	***	0.61	0.14
Years Education	-0.08	**	0.92	0.02	-0.10	***	0.91	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.01		1.01	0.24	-0.26		0.77	0.28
Constant	-1.22	**	0.30	0.39	-0.60		0.55	0.37
Partner / Spouse physically violent	-0.04		0.96	0.27	-0.06		0.94	0.28
Age	0.01		1.01	0.01	0.00		1.00	0.01
White	-0.55	***	0.58	0.15	-0.49	***	0.61	0.14
Years Education	-0.08	**	0.92	0.02	-0.10	***	0.91	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.01		1.01	0.24	-0.26		0.77	0.28
Constant	-1.20	**	0.30	0.39	-0.63	^	0.53	0.37

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 =

Table A.65
Cross-sectional Analysis of Stress - Wave 2. For Married and Cohabiting Respondents Only. Logistic Regression Models. Outcome Modeled is Odds of Experiencing Stress

	MALE (N =2983)				FEMALE (N = 3694)			
House Stress	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	0.09		1.10	0.11	0.01		1.01	0.09
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.19		0.83	0.12	0.09		1.09	0.10
Years Education	-0.05	**	0.95	0.02	-0.14	***	0.87	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.06		1.06	0.12	0.04		1.04	0.09
Constant	-0.70	*	0.50	0.30	0.64	*	1.89	0.26
Hitting or Throwing	0.32	*	1.38	0.15	0.30	*	1.36	0.13
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.18		0.84	0.12	0.09		1.09	0.09
Years Education	-0.05	**	0.95	0.02	-0.13	***	0.88	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.06		1.06	0.12	0.03		1.03	0.09
Constant	-0.76	*	0.47	0.30	0.53	*	1.70	0.26
Arguments got Physical	0.22		1.24	0.18	0.45	**	1.57	0.15
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.18		0.83	0.12	0.09		1.10	0.09
Years Education	-0.05	**	0.95	0.02	-0.13	***	0.88	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.05		1.05	0.12	0.04		1.04	0.09
Constant	-0.70	*	0.50	0.30	0.52	*	1.68	0.26
Primary Respondent physically violent	0.23		1.26	0.21	0.58	***	1.78	0.16
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.18		0.83	0.12	0.10		1.10	0.09
Years Education	-0.05	**	0.95	0.02	-0.13	***	0.88	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.05		1.06	0.12	0.04		1.04	0.09
Constant	-0.69	*	0.50	0.30	0.51	^	1.66	0.26
Partner / Spouse physically violent	0.15		1.16	0.22	0.50	**	1.66	0.17
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.18		0.83	0.12	0.09		1.09	0.09
Years Education	-0.05	**	0.95	0.02	-0.13	***	0.88	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.05		1.06	0.12	0.04		1.04	0.09
Constant	-0.68	*	0.51	0.30	0.53	*	1.70	0.26

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.66
Cross-sectional Analysis of Stress: Full Sample Included. Logistic Regression Models. Outcome Modeled is Odds of Experiencing Stress

	MALE				FEMALE			
House Stress	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
WAVE 1: Male (n=2657), Female (n= 3876)								
Arguments got Physical	0.05		1.05	0.20	0.31	*	1.37	0.14
Age	0.00		1.00	0.01	-0.01		0.99	0.01
White	-0.55	***	0.58	0.15	-0.36	**	0.69	0.13
Years Education	-0.08	**	0.92	0.02	-0.09	***	0.92	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.17		1.18	0.23	-0.18		0.83	0.26
Current Partner	0.05		1.05	0.18	-0.38	**	0.69	0.12
Constant	-0.79	^	0.45	0.43	-0.53		0.59	0.36
WAVE 2: Male (n=3023), Female (n= 4171)								
Arguments got Physical	0.12		1.12	0.16	0.31	**	1.36	0.11
Age	0.00		1.00	0.00	0.00		1.00	0.00
White	-0.14		0.87	0.12	0.20	*	1.22	0.09
Years Education	-0.08	***	0.92	0.02	-0.13	***	0.88	0.02
Annual Income	0.00		1.00	0.00	0.00	^	1.00	0.00
Income Missing - replaced mean	0.04		1.04	0.12	0.06		1.06	0.08
Current Partner	-0.22	^	0.81	0.13	-0.17	*	0.85	0.08
Constant	-0.18		0.83	0.32	0.50	^	1.64	0.26

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.67
Model Testing: Random Effects Logistic Regression Models: Stress – For Married and Cohabiting Respondent Models Only

Stress		Overall Likelihood Ratio Test (Prob. > chi2)	RHO test (Prob. > chibar2)	Wald (Prob. > chi2)
Male	Verbal Aggression	76.16 (***)	0.32	74.72 (***)
	Hitting or Throwing	73.01 (***)	0.32	71.84 (***)
	Arguments got Physical	73.57 (***)	0.31	72.38 (***)
	Primary Respondent physically violent	73.95 (***)	0.31	72.75 (***)
	Partner / Spouse Physically Violent	74.64 (***)	0.32	73.06 (***)
	Any Physical violence at any time in study	48.09 (***)	0.02	46.11 (***)
	Any Verbal Aggression at Any Time in Study	48.14 (***)	0.02	46.19 (***)
Female	Verbal Aggression	324.52 (***)	3.73 (*)	268.66 (***)
	Hitting or Throwing	329.17 (***)	3.67 (*)	271.67 (***)
	Arguments got Physical	329.63 (***)	3.42 (*)	271.22 (***)
	Primary Respondent physically violent	328.92 (***)	3.38 (*)	271.00 (***)
	Partner / Spouse Physically Violent	327.72 (***)	3.54 (*)	270.51 (***)
	Any Physical violence at any time in study	168.98 (***)	5.54 ^	132.33 (***)
	Any Verbal Aggression at Any Time in Study	172.81 (***)	5.30 (*)	133.97 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.68
Random Effects Logistic Regression Models: Stress. Full Sample

Stress Model Testing		Overall Likelihood Ratio Test (Prob. > chi2)	RHO test (Prob. > chibar2)	Wald (Prob. > chi2)
Male	Arguments got Physical	73.67 (***)	0.31	104.19 (***)
Female	Arguments got Physical	329.27 (***)	3.42 (*)	398.15 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.69
Model Testing of Social Connectedness using Linear Regression models and Cross-Sectional Data.
Married and Cohabiting Respondents Only

Social Connectedness		WAVE 1			WAVE 2			WAVE 3		
		R-Squared	F-test	(Prob.>F)	R-Squared	F-test	(Prob.>F)	R-Squared	F-test	(Prob.>F)
Male	Verbal Aggression	0.05	35.64	(***)	0.06	26.54	(***)	0.06	12.62	(***)
	Hitting or Throwing	0.05	35.95	(***)	0.06	26.22	(***)	0.06	12.57	(***)
	Arguments got Physical	0.05	36.29	(***)	0.06	25.98	(***)	0.06	12.74	(***)
	Primary Respondent physically violent	0.05	36.43	(***)	0.06	25.93	(***)	0.06	12.38	(***)
	Partner / Spouse Physically Violent	0.05	35.48	(***)	0.06	25.95	(***)	0.06	12.22	(***)
Female	Verbal Aggression	0.04	23.40	(***)	0.07	29.87	(***)	0.05	13.74	(***)
	Hitting or Throwing	0.05	24.06	(***)	0.07	29.00	(***)	0.05	14.32	(***)
	Arguments got Physical	0.05	24.23	(***)	0.07	29.00	(***)	0.05	14.27	(***)
	Primary Respondent physically violent	0.05	24.55	(***)	0.07	30.00	(***)	0.05	14.27	(***)
	Partner / Spouse Physically Violent	0.04	23.53	(***)	0.07	30.00	(***)	0.05	14.32	(***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.70
Model Testing of Social Connectedness using Linear Regression models and Cross-Sectional Data. Full Sample Models.

Social Connectedness Model Testing		WAVE 1		WAVE 2		WAVE 3	
		R-Squared	F-test (Prob.>F)	R-Squared	F-test (Prob.>F)	R-Squared	F-test (Prob.>F)
Male	Arguments got Physical	0.05	18.80 (*)	0.06	21.06 (***)	0.07	10.07 (***)
Female	Arguments got Physical	0.04	22.01 (***)	0.06	21.06 (***)	0.06	10.59 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.71
Cross-Sectional Analysis: Social Connectedness Wave 1 - For Married and Cohabiting Respondents. Linear Regression Models

	MALE (N =2610)			FEMALE (N = 3046		
Social Connectedness or Isolation	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Verbal Aggression	-0.38	**	0.14	-0.28	^	0.17
Age	-0.06	***	0.01	-0.06	***	0.01
White	-0.39	*	0.17	-0.32		0.21
Years Education	0.20	***	0.03	0.18	***	0.03
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.04		0.30	0.13		0.34
Constant	14.98	***	0.44	15.04	***	0.52
Hitting or Throwing	-0.61	*	0.25	-0.55	*	0.26
Age	-0.07	***	0.01	-0.06	***	0.01
White	-0.45	**	0.17	-0.36	^	0.20
Years Education	0.19	***	0.03	0.17	***	0.03
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.04		0.30	0.13		0.34
Constant	15.04	***	0.45	15.11	***	0.53
Arguments got Physical	-0.79	**	0.25	-0.69	**	0.26
Age	-0.07	***	0.01	-0.06	***	0.01
White	-0.45	**	0.17	-0.37	^	0.20
Years Education	0.19	***	0.03	0.18	***	0.03
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.05		0.30	0.14		0.34
Constant	15.02	***	0.44	15.08	***	0.52
Primary Respondent physically violent	-0.97	**	0.29	-0.91	**	0.30
Age	-0.07	***	0.01	-0.06	***	0.01
White	-0.45	**	0.17	-0.37	^	0.20
Years Education	0.19	***	0.03	0.18	***	0.03
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.04		0.30	0.13		0.34
Constant	15.01	***	0.44	15.08	***	0.52

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.34 Continued

	MALE (N =2610)			FEMALE (N = 3046		
Social Connectedness or Isolation	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Partner / Spouse physically violent	-0.69	*	0.30	-0.53	^	0.32
Age	-0.07	***	0.01	-0.06	***	0.01
White	-0.46	**	0.17	-0.37	^	0.20
Years Education	0.19	***	0.03	0.18	***	0.03
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.04		0.30	0.14		0.34
Constant	14.98	***	0.44	15.02	***	0.52

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.72
Cross-Sectional Analysis: Social Connectedness Wave 2: For Married and Cohabiting Respondents. Linear Regression Models

	MALE (N = 2492)			FEMALE (N = 2821)		
Social Conn.	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Verbal Aggression	-0.51	*	0.26	-0.49	*	0.22
Age	-0.09	***	0.01	-0.05	***	0.01
White	-0.37		0.32	0.07		0.27
Years Education	0.36	***	0.04	0.48	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income Missing - replaced mean	0.10		0.30	-0.48	*	0.23
Constant	13.22	***	0.77	8.48	***	0.74
Hitting or Throwing	-0.39		0.38	-0.39		0.32
Age	-0.09	***	0.01	-0.05	***	0.01
White	-0.42		0.32	-0.03		0.26
Years Education	0.36	***	0.04	0.48	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income Missing - replaced mean	0.10		0.30	-0.48	*	0.23
Constant	13.00	***	0.75	8.28	***	0.74
Arguments got Physical	0.07		0.48	-1.04	**	0.36
Age	-0.09	***	0.01	-0.05	***	0.01
White	-0.42		0.32	-0.05		0.26
Years Education	0.37	***	0.04	0.48	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income Missing - replaced mean	0.10		0.30	-0.49	*	0.23
Constant	12.85	***	0.75	8.40	***	0.74
Primary Respondent physically violent	0.30		0.56	-0.99	*	0.40
Age	-0.08	***	0.01	-0.05	***	0.01
White	-0.41		0.32	-0.05		0.26
Years Education	0.37	***	0.04	0.48	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income Missing - replaced mean	0.10		0.30	-0.48	*	0.23
Constant	12.81	***	0.75	8.36	***	0.74
Partner / Spouse physically violent	0.44		0.56	-0.74	^	0.42
Age	-0.08	***	0.01	-0.05	***	0.01
White	-0.41		0.32	-0.04		0.26
Years Education	0.37	***	0.04	0.48	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income Missing - replaced mean	0.10		0.30	-0.49	*	0.23
Constant	12.78	***	0.75	8.29	***	0.74

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A. 73
Cross-Sectional Analysis: Social Connectedness Wave 3: For Married and Cohabiting Respondents. Linear Regression Models

	MALE (N =1059)			Female (N =1560)		
Social Conn.	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Verbal Aggression	0.36		0.34	0.24		0.27
Age	-0.04	^	0.02	-0.02		0.02
White	-0.35		0.50	-0.70	*	0.34
Years Education	0.39	***	0.06	0.51	***	0.06
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.83	*	0.39	0.06		0.32
Constant	9.36	***	1.40	7.45	***	1.17
Hitting or Throwing	1.39	^	0.85	0.43		0.82
Age	-0.04	*	0.02	-0.03		0.02
White	-0.31		0.50	-0.67	*	0.32
Years Education	0.39	***	0.06	0.52	***	0.06
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.83	*	0.39	0.07		0.31
Constant	9.63	***	1.38	7.59	***	1.13
Arguments got Physical	2.07		1.41	-0.02		0.96
Age	-0.04	^	0.02	-0.03	^	0.02
White	-0.34		0.50	-0.67	*	0.32
Years Education	0.39	***	0.06	0.52	***	0.06
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.84	*	0.39	0.07		0.31
Constant	9.50	***	1.38	7.61	***	1.13
Primary Respondent physically violent	1.64		2.00	-0.08		1.20
Age	-0.04	*	0.02	-0.03	^	0.02
White	-0.34		0.50	-0.67	*	0.32
Years Education	0.39	***	0.06	0.52	***	0.06
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.85	*	0.39	0.07		0.31
Constant	9.60	***	1.38	7.61	***	1.13
Partner / Spouse physically violent	-0.20		1.43	-0.89		1.57
Age	-0.04	*	0.02	-0.03	^	0.02
White	-0.34		0.50	-0.67	*	0.32
Years Education	0.39	***	0.06	0.52	***	0.06
Annual Income	0.00	*	0.00	0.00		0.00
Income Missing - replaced mean	0.84	*	0.39	0.07		0.31
Constant	9.69	***	1.38	7.63	***	1.12

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.74
Cross-sectional Analysis: Social Connectedness: Full Sample. Linear Regression Models

	MALE			FEMALE		
Social Conn.	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Wave 1 male (n= 2403) ; Female (n=3422)						
Arguments got Physical	-0.35		0.28	-0.14		0.20
Age	-0.06	***	0.01	-0.06	***	0.01
White	-1.43	***	0.26	-0.52	**	0.20
Years Education	0.15	***	0.03	0.18	***	0.03
Annual Income	0.00		0.00	0.00	^	0.00
Income Missing - replaced mean	-0.65	^	0.34	-0.14		0.33
Current Partner	-0.50	^	0.26	-0.29	^	0.17
Constant	17.19	***	0.62	15.28	***	0.50
Wave 2 : Male (N= 2485); Female (N=3196)						
Arguments got Physical	0.42		0.41	0.42		0.41
Age	-0.07	***	0.01	-0.07	***	0.01
White	-0.29		0.32	-0.29		0.32
Years Education	0.36	***	0.04	0.36	***	0.04
Annual Income	0.00		0.00	0.00		0.00
Income Missing - replaced mean	0.18		0.30	0.18		0.30
Current Partner	-1.33	***	0.34	-1.33	***	0.34
Constant	13.11	***	0.79	13.11	***	0.79
Wave 3: Male (N= 932); Female (N= 1150)						
Arguments got Physical	1.04		0.97	-0.41		0.64
Age	-0.04	^	0.02	-0.03		0.02
White	-0.53		0.54	-0.60		0.44
Years Education	0.41	***	0.06	0.49	***	0.06
Annual Income	0.00		0.00	0.00		0.00
Income Missing - replaced mean	0.86	*	0.40	-0.09		0.36
Current Partner	-1.23		0.80	-0.34		0.50
Constant	11.03	***	1.51	8.18	***	1.44

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 =

Table A.75
Model Testing Random Effects Linear Regression Models of Social Connectedness: Married and Cohabiting Respondents

Model Testing: Social Connectedness		R-Squared within	R-Squared between	R-Squared Overall	Wald (prob.> chi2)	
Male	Verbal Aggression	0.04	0.08	0.06	224.17	(***)
	Hitting or Throwing	0.03	0.08	0.06	223.02	(***)
	Arguments got Physical	0.03	0.08	0.06	223.10	(***)
	Primary Respondent physically violent	0.03	0.08	0.06	223.42	(***)
	Partner / Spouse Physically Violent	0.03	0.08	0.06	222.88	(***)
	Any Physical violence at any time in study	0.03	0.06	0.05	122.80	(***)
	Any Verbal Aggression at Any Time in Study	0.03	0.06	0.05	122.55	(***)
Female	Verbal Aggression	0.10	0.05	0.07	400.65	(***)
	Hitting or Throwing	0.10	0.05	0.07	401.23	(***)
	Arguments got Physical	0.10	0.05	0.07	403.26	(***)
	Primary Respondent physically violent	0.10	0.05	0.07	404.44	(***)
	Partner / Spouse Physically Violent	0.10	0.05	0.07	401.17	(***)
	Any Physical violence at any time in study	0.10	0.05	0.07	405.86	(***)
	Any Verbal Aggression at Any Time in Study	0.10	0.05	0.07	401.32	(***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.76
Test of Random Effects Linear Regression Models of Social Connectedness: Full Sample

Model Testing: Social Connectedness		R-squared -within	R-Squared between	R-Squared Overall	Wald (prob. >chi2)
Male	Arguments got Physical	0.04	0.08	0.06	247.26 (***)
Female	Arguments got Physical	0.11	0.05	0.07	420.77 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.77
Model Testing of Cross-Sectional Linear Regression Models of Income. For Married and Cohabiting Respondents

Model Testing : Income		WAVE 1			WAVE 2			WAVE 3		
		R-Squared	F-test	(Prob.>F)	R-Squared	F-test	(Prob.>F)	R-Squared	F-test	(Prob.>F)
Male	Verbal Aggression	0.12	67.66	(***)	0.12	49.69	(***)	0.09	26.56	(***)
	Hitting or Throwing	0.10	50.32	(***)	0.12	0.12	(***)	0.08	26.23	(***)
	Arguments got Physical	0.10	50.35	(***)	0.12	47.99	(***)	0.08	26.28	(***)
	Primary Respondent physically violent	0.10	50.00	(***)	0.12	47.98	(***)	0.08	26.25	(***)
	Partner / Spouse Physically Violent	0.10	50.13	(***)	0.12	48.36	(***)	0.08	26.28	(***)
Female	Verbal Aggression	0.14	108.89	(***)	0.07	50.59	(***)	0.02	16.95	(***)
	Hitting or Throwing	0.14	109.09	(***)	0.07	50.33	(***)	0.03	14.07	(***)
	Arguments got Physical	0.14	108.90	(***)	0.07	49.64	(***)	0.02	13.57	(***)
	Primary Respondent physically violent	0.14	108.94	(***)	0.06	49.26	(***)	0.02	13.59	(***)
	Partner / Spouse Physically Violent	0.14	109.04	(***)	0.06	49.45	(***)	0.02	13.95	(***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.78
Model Testing of Cross-Sectional Linear Regression Models of Income. Full Sample Models

Model Testing: Income		WAVE 1			WAVE 2			WAVE 3		
		R-Squared	F-test	(Prob.>F)	R-Squared	F-test	(Prob.>F)	R-Squared	F-test	(Prob.>F)
Male	Arguments got Physical	0.14	110.48	(***)	0.12	86.35	(***)	20.26	0.10	(***)
Female	Arguments got Physical	0.14	110.48	(***)	0.12	86.35	(***)	0.05	17.46	(***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.79
Cross-Sectional Analysis of Annual Income - Wave 1: For Married and Cohabiting Respondents. Linear Regression Models

	MALE	3045		FEMALE	4930	
Annual Income – Wave 1	Coef.	T<|Z|	SE	Coef.	T<|Z|	SE
Verbal Aggression	6029.49	***	931.82	-938.05	**	295.75
Age	197.78	***	38.62	69.50	***	12.04
White	3642.52	***	612.71	-186.05		334.83
Years Education	2420.68	***	228.69	1512.24	***	55.48
Constant	-24122.66	***	3695.84	-11287.39	***	891.55
Hitting or Throwing	531.28		1110.34	-657.59		528.28
Age	228.09	***	38.03	69.71	***	12.14
White	4397.71	***	603.67	-368.03		329.33
Years Education	2449.41	***	227.83	1501.83	***	55.59
Constant	-22619.49	***	3738.10	-11394.70	***	897.99
Arguments got Physical	156.29		1050.73	-490.65		558.84
Age	227.17	***	37.86	70.70	***	12.09
White	4395.10	***	603.24	-379.84		329.09
Years Education	2446.28	***	227.55	1504.71	***	55.52
Constant	-22496.75	***	3723.07	-11477.91	***	893.09
Primary Respondent physically violent	-994.22		1026.43	-110.87		672.74
Age	224.81	***	38.16	71.51	***	12.11
White	4388.02	***	602.91	-389.05		329.12
Years Education	2439.83	***	228.36	1505.86	***	55.51
Constant	-22243.60	***	3755.10	-11545.60	***	892.30
Partner / Spouse physically violent	570.00		1262.87	-375.08		694.97
Age	228.21	***	37.93	70.99	***	12.11
White	4394.18	***	603.27	-384.36		329.09
Years Education	2448.02	***	227.96	1505.48	***	55.51
Constant	-22581.02	***	3734.97	-11513.39	***	892.39

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.80
Cross-Sectional Analysis of Annual Income - Wave 2: For Married and Cohabiting Respondents. Linear Regression Models

Annual Income – Wave 2	MALE (N =3070)			FEMALE (N =4930)		
Income	Coef.	T<|Z|	SE	Coef.	T<|Z|	SE
Verbal Aggression	3018.61	***	752.14	-1088.48	**	419.05
Age	99.57	***	23.09	150.36	***	17.14
White	1619.66	*	649.05	-843.27	^	474.01
Years Education	2435.14	***	186.02	1294.72	***	78.47
Constant	-7622.87	**	2788.91	1484.60		1327.00
Hitting or Throwing	-1333.18		984.87	-1561.94	*	778.99
Age	91.73	***	23.27	151.02	***	17.19
White	1871.04	**	649.89	-1062.91	*	465.06
Years Education	2438.03	***	185.80	1281.51	***	78.58
Constant	-5314.80	^	2734.63	1336.25		1325.84
Arguments got Physical	-1441.61		1214.16	-1235.79		920.89
Age	91.87	***	23.30	153.02	***	17.16
White	1867.36	**	650.08	-1085.13	*	465.04
Years Education	2444.53	***	185.91	1285.90	***	78.54
Constant	-5437.55	*	2734.77	1160.05		1322.02
Primary Respondent physically violent	-1326.57		1463.60	-1153.57		1051.51
Age	92.55	***	23.33	153.69	***	17.15
White	1874.57	**	650.03	-1087.46	*	465.07
Years Education	2445.99	***	186.06	1286.63	***	78.54
Constant	-5521.84	*	2740.12	1105.24		1320.83
Partner / Spouse physically violent	-2802.76	*	1200.17	-1078.30		1096.15
Age	89.37	***	23.41	153.87	***	17.16
White	1849.94	**	649.49	-1080.22	*	465.10
Years Education	2438.32	***	185.78	1286.93	***	78.55
Constant	-5195.94	^	2735.54	1082.21		1320.40

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.81
Cross-Sectional Analysis of Annual Income - Wave 3: For Married and Cohabiting Respondents. Linear Regression Models

Annual Income – Wave 3	MALE (N =1615)			FEMALE (N =2403)		
Income	Coef.	T<|Z|	SE	Coef.	T<|Z|	SE
Verbal Aggression	5142.17	***	1454.80	44.77		5142.17
Age	-269.10	***	46.28	183.86	***	-269.10
White	3654.58	**	1256.63	-2499.12	*	3654.58
Years Education	2341.38	***	305.61	1465.57	***	2341.38
Constant	26623.78	***	4966.49	9210.29	*	26623.78
Hitting or Throwing	-1092.16		4310.39	-3975.24		-1092.16
Age	-312.12	***	46.19	179.63	***	-312.12
White	3914.16	**	1243.53	-2499.74	*	3914.16
Years Education	2392.61	***	310.11	1465.45	***	2392.61
Constant	30865.51	***	4648.05	9558.39	*	30865.51
Arguments got Physical	-5483.62		4816.41	-85.38		-5483.62
Age	-315.13	***	46.27	183.56	***	-315.13
White	3932.20	**	1245.01	-2493.54	*	3932.20
Years Education	2381.00	***	309.76	1466.03	***	2381.00
Constant	31246.71	***	4635.97	9237.33	*	31246.71
Primary Respondent physically violent	-553.80		6579.92	48.09		-553.80
Age	-312.09	***	46.25	183.61	***	-312.09
White	3926.66	**	1246.34	-2493.83	*	3926.66
Years Education	2392.29	***	309.74	1466.19	***	2392.29
Constant	30836.70	***	4640.49	9230.13	*	30836.70
Partner / Spouse physically violent	-3520.08		6517.67	-4031.95		-3520.08
Age	-313.51	***	46.21	182.68	***	-313.51
White	3924.22	**	1246.51	-2498.20	*	3924.22
Years Education	2390.73	***	309.81	1466.82	***	2390.73
Constant	30971.03	***	4639.36	9312.89	*	30971.03

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.82
Cross-Sectional Analysis of Annual Income - Full Sample. Linear Regression Models

	MALE			FEMALE		
Income	Coef.	p<|Z|	SE	Coef.	p<|Z|	SE
Wave 1: Male (N=3045); Female (N= 4930)						
Arguments got Physical	-376.34		407.57	-376.34		429.38
Age	25.12	^	13.60	25.12	^	13.73
White	-994.36	**	376.99	-994.36	**	384.58
Years Education	1559.06	***	69.58	1559.06	***	61.31
Current Partner	-2286.88	***	367.25	-2286.88	***	347.97
Constant	-8292.89	***	1117.75	-8292.89	***	1037.68
Wave 2 : Male (N=3070); Female (N= 4930)						
Arguments got Physical	-2338.95	^	1274.85	-1473.87	*	722.43
Age	46.96		29.80	149.41	***	19.27
White	2043.02	*	933.31	-1253.99	*	538.04
Years Education	2361.61	***	127.65	1310.30	***	86.78
Current Partner	4042.98	***	1041.68	-673.12		514.52
Constant	-5558.21	*	2442.87	1632.05		1533.02
Wave 3: Male (N=1615); Female (N= 2403)						
Arguments got Physical	778.67		2289.64	778.67		1969.60
Age	203.94	***	35.21	203.94	***	47.59
White	-1678.14		1190.69	-1678.14		1295.73
Years Education	1615.58	***	216.47	1615.58	***	195.23
Current Partner	658.02		1884.68	658.02		1741.33
Constant	4596.58		3872.05	4596.58		4111.78

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.83
Model Testing of Random Effects Linear Regression Models of Income. For Married and Cohabiting Respondents

Model Testing: Income		R-Squared within	R-Squared between	R-Squared Overall	Wald (prob.> chi2)
Male	Verbal Aggression	0.16	0.22	0.19	1048.56 (***)
	Hitting or Throwing	0.16	0.22	0.19	1031.99 (***)
	Arguments got Physical	0.16	0.22	0.19	1037.26 (***)
	Primary Respondent physically violent	0.16	0.22	0.19	1046.07 (***)
	Partner / Spouse Physically Violent	0.16	0.22	0.19	1036.36 (***)
	Any Physical violence at any time in study	0.14	0.16	0.16	631.85 (***)
	Any Verbal Aggression at Any Time in Study	0.14	0.17	0.16	629.95 (***)
Female	Verbal Aggression	0.40	0.22	0.32	5144.31 (***)
	Hitting or Throwing	0.40	0.22	0.32	5136.24 (***)
	Arguments got Physical	0.40	0.22	0.32	5133.75 (***)
	Primary Respondent physically violent	0.40	0.22	0.32	5133.32 (***)
	Partner / Spouse Physically Violent	0.40	0.22	0.32	5133.02 (***)
	Any Physical violence at any time in study	0.38	0.10	0.28	2907.22 (***)
	Any Verbal Aggression at Any Time in Study	0.38	0.10	0.28	2906.78 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.84
Model Testing of Random Effects Linear Regression Models of Income. For Full Sample

Model Testing : Income		R-squared -within	R-Squared between	R-Squared Overall	Wald (prob. >chi2)
Male	Arguments got Physical	0.14	0.25	0.20	971.88 (***)
Female	Arguments got Physical	0.48	0.22	0.36	5039.65 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.85
Model Testing of Logistic Regression Models of Fairness Spending Money. For Married and Cohabiting Respondents.

Fairness Spending		WAVE 1		WAVE 2		WAVE 3	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Verbal Aggression	53.96 (***)	7.46	60.78 (***)	14.33 (^)	31.13 (***)	1.89
	Hitting or Throwing	45.02 (***)	10.50	61.45 (***)	9.32	32.76 (***)	9.45
	Arguments got Physical	50.03 (***)	1.96	60.15 (***)	15.76 (*)	27.29 (***)	9.49
	Primary Respondent physically violent	46.20 (***)	4.88	58.85 (***)	19.51 (*)	27.49 (***)	8.07
	Partner / Spouse Physically Violent	45.44 (***)	3.26	52.25 (***)	21.67 (**)	26.70 (***)	6.42
Female	Verbal Aggression	50.56 (***)	12.02	70.70 (***)	9.65	35.65 (***)	6.19
	Hitting or Throwing	34.03 (***)	4.57	55.51 (***)	8.18	20.51 (***)	12.90
	Arguments got Physical	36.13 (***)	4.87	57.65 (***)	9.45	29.60 (***)	11.83
	Primary Respondent physically violent	35.18 (***)	7.13	63.65 (***)	10.03	24.91 (***)	8.91
	Partner / Spouse Physically Violent	26.87 (***)	4.94	45.76 (***)	7.64	19.62 (**)	9.61

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.86
Model Testing of Logistic Regression Models of Fairness Spending Money – For Full Sample

Model Testing – Fairness Money : All Relationship Types		WAVE 1		WAVE 2		WAVE 3	
		Likelihood Ratio Test (Prob. > chi2)	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)	Likelihood Ratio Test	Hosmer-Lemeshow Goodness Fit (Prob. > chi2)
Male	Arguments got Physical	42.06 (***)	6.04	61.31 (***)	9.87	26.88 (***)	9.02
Female	Arguments got Physical	42.06 (***)	6.04	61.31 (***)	9.87	26.34 (***)	8.16

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.87
Cross- Sectional Analysis: Money Fairness - Wave 1: For Married and Cohabiting Respondents, Logistic Regression Models. Outcome modeled is "Spending Money is Fair."

	MALE (N =2204)				FEMALE (N = 2712)			
Money Fair	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	-0.54	**	0.58	0.18	-0.83	***	0.44	0.16
Age	0.03	***	1.03	0.01	0.02	**	1.02	0.00
White	-0.03		0.97	0.16	0.05		1.05	0.14
Years Education	-0.02		0.98	0.02	0.03		1.03	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.23		1.26	0.24	-0.24		0.79	0.21
Constant	1.35	**	3.86	0.41	1.41	***	4.08	0.37
Hitting or Throwing	-0.14		0.87	0.16	-0.56	***	0.57	0.14
Age	0.03	***	1.03	0.01	0.02	**	1.02	0.00
White	-0.07		0.93	0.16	0.03		1.03	0.14
Years Education	-0.02		0.98	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.22		1.25	0.24	-0.22		0.80	0.21
Constant	0.94	*	2.57	0.38	1.03	**	2.81	0.35
Arguments got Physical	-0.41	*	0.66	0.17	-0.63	***	0.53	0.14
Age	0.03	***	1.03	0.01	0.02	**	1.02	0.00
White	-0.06		0.94	0.16	0.02		1.02	0.14
Years Education	-0.03		0.97	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.20		1.22	0.24	-0.20		0.82	0.21
Constant	1.07	**	2.93	0.38	0.97	**	2.63	0.34
Primary Respondent physically violent	-0.55	**	0.58	0.19	-0.70	***	0.50	0.16
Age	0.03	***	1.03	0.01	0.02	**	1.02	0.00
White	-0.08		0.92	0.16	0.03		1.03	0.14
Years Education	-0.03		0.97	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.19		1.21	0.24	-0.20		0.82	0.21
Constant	1.11	**	3.03	0.38	0.94	**	2.55	0.34

Table A.50 Continued.

	MALE (N =2204)				FEMALE (N = 2712)			
Money Fair	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Partner / Spouse physically violent	-0.61	**	0.54	0.18	-0.53	**	0.59	0.18
Age	0.03	***	1.03	0.01	0.02	***	1.02	0.00
White	-0.07		0.93	0.16	0.04		1.04	0.14
Years Education	-0.03		0.97	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.18		1.19	0.24	-0.21		0.81	0.21
Constant	1.15	**	3.14	0.38	0.88	*	2.40	0.34

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.88
Cross- Sectional Analysis: Money Fairness - Wave 2: For Married and Cohabiting Respondents - Logistic Regression Models. Outcome modeled is "Spending Money is Fair."

	MALE (N = 2304)				FEMALE (N =2799)			
Money Fair	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	-0.65	***	0.52	0.18	-0.84	***	0.43	0.16
Age	0.02	***	1.02	0.01	0.02	***	1.02	0.00
White	0.50	***	1.66	0.14	0.14		1.15	0.13
Years Education	-0.03		0.97	0.02	0.03		1.03	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.00		1.00	0.15	0.30	**	1.36	0.11
Constant	1.12	**	3.06	0.40	0.94	**	2.55	0.36
Hitting or Throwing	-0.65	***	0.52	0.16	-0.61	***	0.54	0.14
Age	0.02	***	1.02	0.01	0.02	***	1.02	0.00
White	0.48	**	1.62	0.14	0.11		1.12	0.13
Years Education	-0.04	^	0.96	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.01		0.99	0.15	0.33	**	1.39	0.11
Constant	0.76	*	2.14	0.36	0.43		1.54	0.34
Arguments got Physical	-0.71	***	0.49	0.18	-0.76	***	0.47	0.16
Age	0.02	***	1.02	0.01	0.02	***	1.02	0.00
White	0.48	**	1.62	0.14	0.11		1.11	0.13
Years Education	-0.04	^	0.96	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.00		1.00	0.15	0.31	**	1.37	0.11
Constant	0.70	^	2.01	0.36	0.40		1.49	0.34
Primary Respondent physically violent	-0.77	***	0.46	0.21	-0.97	***	0.38	0.18
Age	0.02	***	1.02	0.01	0.02	***	1.02	0.00
White	0.49	**	1.63	0.14	0.10		1.10	0.13
Years Education	-0.04	^	0.96	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.01		0.99	0.15	0.32	**	1.38	0.11
Constant	0.67	^	1.96	0.36	0.41		1.51	0.34

Table 4.51 Continued

	MALE (N = 2304)				FEMALE (N =2799)			
Money Fair	Coef.	p<|Z|	Money Fair	Coef.	p<|Z|	Money Fair	Coef.	p<|Z|
Partner / Spouse physically violent	-0.56	*	0.57	0.22	-0.60	**	0.55	0.19
Age	0.02	***	1.03	0.01	0.02	***	1.02	0.00
White	0.49	**	1.63	0.14	0.13		1.14	0.13
Years Education	-0.04	^	0.97	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.02		0.98	0.14	0.31	**	1.37	0.11
Constant	0.62	^	1.86	0.36	0.29		1.34	0.33

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.89
Cross- Sectional Analysis: Money Fairness - Wave 3: For Married and Cohabiting Respondents. Logistic Regression. Outcome modeled is "Spending Money is Fair."

	MALE (N = 1085)				FEMALE (N =1403)			
Money Fair	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
Verbal Aggression	-0.56	*	0.57	0.28	-0.89	***	0.41	0.21
Age	0.05	**	1.05	0.01	0.02	^	1.02	0.01
White	0.83	**	2.29	0.28	0.42	*	1.52	0.21
Years Education	-0.04		0.96	0.04	-0.01		0.99	0.04
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.03		0.97	0.26	0.11		1.12	0.19
Constant	-0.07		0.93	0.98	1.37	^	3.93	0.71
Hitting or Throwing	-1.17	**	0.31	0.43	-0.95	**	0.39	0.35
Age	0.05	***	1.05	0.01	0.02	*	1.02	0.01
White	0.76	**	2.15	0.29	0.45	*	1.57	0.21
Years Education	-0.04		0.96	0.04	-0.02		0.98	0.04
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.04		0.96	0.26	0.10		1.11	0.19
Constant	-0.53		0.59	0.95	0.75		2.13	0.68
Arguments got Physical	-0.55		0.58	0.65	-1.44	***	0.24	0.34
Age	0.05	***	1.05	0.01	0.02	*	1.02	0.01
White	0.82	**	2.27	0.28	0.44	*	1.55	0.21
Years Education	-0.04		0.96	0.04	-0.03		0.97	0.04
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.04		0.96	0.26	0.12		1.12	0.19
Constant	-0.60		0.55	0.94	0.85		2.35	0.69
Primary Respondent physically violent	-0.80		0.45	0.81	-1.48	***	0.23	0.42
Age	0.05	***	1.05	0.01	0.02	*	1.02	0.01
White	0.82	**	2.27	0.28	0.45	*	1.58	0.21
Years Education	-0.04		0.96	0.04	-0.03		0.97	0.04
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.04		0.96	0.26	0.11		1.12	0.19
Constant	-0.59		0.55	0.94	0.81		2.24	0.69
Partner / Spouse physically violent	0.24		1.27	1.06	-1.34	*	0.26	0.53
Age	0.05	***	1.05	0.01	0.02	*	1.02	0.01
White	0.82	**	2.27	0.28	0.43	*	1.54	0.21
Years Education	-0.04		0.96	0.04	-0.02		0.98	0.04
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.05		0.95	0.26	0.11		1.12	0.19
Constant	-0.67		0.51	0.94	0.72		2.05	0.68

P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^

Table A.90
Cross-Sectional Analysis: Money Fairness – All Waves; Full Sample. Respondents. Logistic Regression Models. Outcome modeled is "Spending Money is Fair."

	MALE				FEMALE			
Money Fair	Coef.	p<|Z|	OR	SE	Coef.	p<|Z|	OR	SE
WAVE 1: Male (n=2330), Female (n=2809)								
Arguments got Physical	-0.45	**	0.64	0.15	-0.58	***	0.56	0.13
Age	0.03	***	1.03	0.01	0.02	**	1.02	0.00
White	-0.10		0.90	0.16	0.04		1.05	0.14
Years Education	-0.02		0.98	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	0.26		1.30	0.24	-0.16		0.85	0.21
Current Partner	0.23		1.26	0.28	0.31		1.36	0.25
Constant	0.90	*	2.46	0.46	0.67		1.96	0.41
WAVE 2: Male (n= 2304), Female (n=2803)								
Arguments got Physical	-0.69	***	0.50	0.17	-0.46	**	0.63	0.15
Age	0.02	***	1.02	0.01	0.02	***	1.02	0.00
White	0.49	**	1.62	0.14	0.13		1.14	0.13
Years Education	-0.04	^	0.97	0.02	0.02		1.02	0.02
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.02		0.98	0.15	0.31	**	1.36	0.11
Current Partner %					2.44	*	11.49	1.13
Constant	0.70	^	2.02	0.36	-2.12	^	0.12	1.17
WAVE 3: Male (n= 1082), Female (n= 1400)								
Arguments got Physical	-0.32		0.73	0.64	-1.13	***	0.32	0.31
Age	0.05	***	1.05	0.01	0.02	*	1.02	0.01
White	0.82	**	2.27	0.28	0.41	^	1.51	0.21
Years Education	-0.04		0.96	0.04	-0.04		0.96	0.04
Annual Income	0.00		1.00	0.00	0.00		1.00	0.00
Income Missing - replaced mean	-0.04		0.96	0.26	0.12		1.13	0.19
Current Partner%								
Constant	-0.61		0.54	0.94	0.98		2.65	0.69

Notes: P<0.001 = ***; P < 0.01 = **; P < 0.05 =*; P < 0.1 = ^
% variable dropped from the model because variable predicted outcome perfectly.

Table A.91
Model Testing for Random Effects Logistic Regression. Fairness of Spending Money.
For Married and Cohabiting Respondents.

Model Testing for Fairness of Spending Money		Overall Likelihood Ratio Test (Prob. > chi2)	RHO test (Prob. > chibar2)	Wald (Prob. > chi2)
Male	Verbal Aggression	127.47 (***)	80.94 (***)	108.24 (***)
	Hitting or Throwing	118.04 (***)	84.81 (***)	103.59 (***)
	Arguments got Physical	117.33 (***)	83.55 (***)	103.50 (***)
	Primary Respondent physically violent	117.22 (***)	82.27 (***)	104.07 (***)
	Partner / Spouse Physically Violent	116.34 (***)	84.61 (***)	102.62 (***)
	Any Physical violence at any time in study	111.25 (***)	48.09 (***)	92.29 (***)
	Any Verbal Aggression at Any Time in Study	103.78 (***)	49.97 (***)	86.18 (***)
Female	Verbal Aggression	117.15 (***)	144.64 (***)	100.57 (***)
	Hitting or Throwing	72.25 (***)	149.64 (***)	69.01 (***)
	Arguments got Physical	78.60 (***)	150.02 (***)	75.17 (***)
	Primary Respondent physically violent	86.49 (***)	151.60 (***)	82.80 (***)
	Partner / Spouse Physically Violent	62.83 (***)	152.79 (***)	59.51 (***)
	Any Physical violence at any time in study	41.19 (***)	98.55 (***)	39.38 (***)
	Any Verbal Aggression at Any Time in Study	28.18 (***)	105.40 (***)	26.64 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

Table A.92
Model Testing for Random Effects Logistic Regression. Fairness of Spending Money. Full Sample.

Model Testing: Fairness of Spending Money		Overall Likelihood Ratio Test (Prob. > chi2)	RHO test (Prob. > chibar2)	Wald (Prob. > chi2)
Male	Arguments got Physical	116.82 (***)	87.89 (***)	113.45 (***)
Female	Arguments got Physical	70.40 (***)	144.34 (***)	76.44 (***)

P< 0.001 = (***); P< 0.01 = (**); P< 0.05 = (*); P <0.1 = ^

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